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This statewide study of the fireman's occupation was undertaken to (1) identify the duties and responsibilities for each rank in the fire service, (2) identify the training and educational requirements of each rank, (3) determine who is best qualified to give the necessary training and education required for each rank, (4) develop a comprehensive training program for all levels of the fire service, including specialized needs, (5) raise the competency and efficiency of the fire service through improved training and educational methods, (6) analyze services being rendered at the present time and determine if other services can be effectively rendered in the future, and (7) develop an organizational structure to implement the results of the study. Participants numbered 11,660 and represented 90 fire departments. Part I of the study was a survey of 377 tasks of firemen while Part II was a survey of fire department supervisorial, administrative, and management functions and responsibilities. The survey findings, presented in tabular form, constitute the bulk (333 pages) of the report. Fifty-two California junior colleges offer courses in fire sciences for students on a pre-entry basis as well as for employed fire service personnel. Two recent developments in the junior college programs are (1) recruit training for newly appointed personnel, and (2) training in basic skills on an off-campus basis. (DG)

A Study of the Firemans Occupation

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A Cooperative Study by the
Bureau of Industrial Education
California State Department of Education
and
Division of Vocational Education
University of California
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CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

Preface

The California State Department of Education, Bureau of Industrial Education, has assisted in the training of fire service personnel in the numerous fire departments within the state for over 35 years. Beginning in 1932, the Bureau of Industrial Education has continually increased its services in helping fire departments develop the proficiency of their personnel. The Fire Training Staff of the Bureau has provided teacher training for fire personnel, supervisory training, and special programs in fire fighting and prevention. Although the services have assisted all sizes of fire departments, the primary beneficiaries have been the many medium and small size departments situated in areas not readily accessible to organized school programs. In areas where organized school programs exist or in fire departments having their own training departments, the fire training staff has assisted by providing curriculum development, instruction in specialized facets of the fire service, and assistance in preparing qualified firemen to become instructors.

Discussions between the California Fire Chiefs' Association and the Bureau of Industrial Education led to a decision to conduct a comprehensive study of the fireman's occupation in the State of California. The Division of Vocational Education, University of California, Los Angeles, contracted to conduct this research. The study was designed to make an occupational task inventory of all the ranks within the fire service. The study also identified the status of training now being received as well as the extent of and the need for services of the Bureau's Fire Service Group. The results of the study were reviewed by six Regional Advisory Committees and a Statewide Fire Science Advisory Committee. From their recommendations, a suggested curriculum has been developed for pre-employment, pre-promotional and post-promotional training for each of the ranks. In addition, the research team has indicated where these curricula may best be offered. It is hoped that this study may be not only informative, but contributive to the increased effectiveness and efficiency of the fire service personnel in California.

Richard S. Nelson, Chief
Bureau of Industrial Education

Acknowledgment

This study of the fireman's occupation was successfully carried out as a result of the assistance of many individuals. The contributions made by the men in the fire departments in completing the survey questionnaire, the efforts and recommendations made by members of the six Regional Advisory Committees, and the Statewide Advisory Committee's work all contributed to the completion of this study.

Appreciation is expressed to the sub-committee of the Statewide Advisory Committee: Thomas G. Dunne, City Manager, Salinas; Elmer Brouillard, Chief, Chico Fire Department; and G. Rodney Porter, Chief, Berkeley Fire Department, for their help in formulating the questionnaire. Additional appreciation and commendation is extended to the Fire Training Staff of the Bureau of Industrial Education for their technical assistance and persevering effort in answering many questions and providing data and information required by the research staff. The men in the Fire Training Service of the Bureau of Industrial Education are: Edward W. Bent, Harvey N. Gruber, Glenn L. Hill, Richard W. Nevins, J. G. McLaughlin, Michael J. Rielley, Cedric Rowntree, Robert H. Shaw, and Carlton Williams.

Grateful acknowledgment is extended to Edwin W. Banhagel for the excellence of his work in developing appropriate computer programs specifically designed for this study and to the personnel of the Division of Vocational Education, who so willingly and capably dealt with the many time-consuming details involved in a study of this scope and complexity.

The Research Staff
1968

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Chapter 1

Fire Service

"Presence of mind and courage in distress"
Ingalls

The Fire Service

Fire has been both a scourge and a blessing to mankind. Through the safe use of fire, mankind has advanced; fire out of control, however, results in loss of both life and property. In times of adversity, men have banded together to fight fires. From bucket brigades of volunteers to the establishment of full-time professionally staffed fire departments, efforts have been made to serve others so that mishaps from fires may be maintained at a minimum.

Experience has shown that fire fighting is best done by those who are professionally trained to do the job. Thus, fire departments were established to protect communities from the ravages of fire. Countless numbers of men, either volunteer or paid, have dedicated their lives to the saving of life and property. Few civilian occupations require the physical stamina, mental alertness, mechanical aptitude, personal courage, and dedication of one's life, while working in constant danger, demanded by the fireman's occupation. In spite of obstacles and dangers, they are not only brave, but gallant.

During the preceding twenty years there have been both social and technological changes occurring in the fire service. These changes are continuing to mount at an ever-increasing rate. Many of these changes

have been precipitated by new hazards to fire fighting. The erection of high-rise structures, large windowless commercial and industrial structures, the use of sealed windows and solid wall buildings, require the utilization of different but appropriate fire fighting techniques unlike those used in the past. Technological changes in manufacturing processes resulting from scientific advancements have increased the hazards of fire fighting in areas where nuclear energy as well as many and varied chemical processes are used. The deterioration of large sections of cities into slum areas create the potential for large and difficult-to-control fires. The rapid growth of urban communities has outstripped the growth of fire departments required for providing adequate fire protection. Existing fire departments, not being able to keep pace with increased demand for additional men and equipment, must spread their services over greater areas thus reducing their effectiveness. The physical location of fire stations outside the areas of population or commercial density often requires additional travel time to the fire.

Another problem is presented by complacency on the part of the public toward the dangers of fire to both person and property. This attitude is reflected in the public's disregard of precautions for fire prevention in their own homes, in lack of concern for the design of new structures that contain potential high fire hazards, and, in some cases, in resistance to the efforts of firemen to control and extinguish fires.

During this period of growth and change the fire service also has made progress, but on a scale not nearly sufficient to keep abreast with the times. Since 1946, the number of firemen in California, and in the United States as well, has approximately doubled. If taken on face value, this fact would be misleading. A large percentage of these

additional firmen have been utilized to improve working conditions. A work week of 84 hours or more was common in 1946, whereas today a 72-hour week is common; and many departments have a 63- or 36-hour weekly work schedule. In addition, the overall work strength has been disrupted, due to the need for manning new or relocated fire stations, and providing such additional services as ambulance and first aid response and increased fire prevention work.

New techniques for both fire fighting and rescue have been developed to meet the new challenges in fire fighting. The aerial platform is used to augment the aerial ladder, thus giving greater versatility in fire ground and rescue operations. Helicopters are being pressed into service to fight fires in high-rise buildings. There is an increase in the use of diesel engines with automatic transmissions. There has been greater utilization of aircraft in fighting brush and forest fires. Infra-red detection systems are being used to locate fires in brush and forests.

Improvements of fog nozzles and heavy stream appliances, increasing the capability for applying water on fires more effectively, has greatly assisted in fighting fires. Other developments include high expansion foam and water additions that readily control specific fire conditions, use all-purpose and specialized extinguishing agents, and more adequate protective clothing and equipment.

The most significant trend in the fire service in recent years not only in California, but throughout the United States, has been the desire of firmen to improve themselves through formal education. As the fire service has grown, greater emphasis has been placed on specialization of services. Firmen today have the opportunity of entering various fields, such as fire prevention, arson investigation, fire share, public

Relations, Water Supply, Rescue, Training, Mechanics, Radiation, Safety, Fire Suppression, or Administration. California has been fortunate that through far-sighted planning, a State Fire Training Program was established and developed to serve the needs of the fire service personnel throughout the State.

The California State Fire Training Program

The California State Fire Training Program has been in existence since 1932. It had a very humble beginning when, as a result of several meetings attended by Jay W. Stevens, State Fire Marshal; Ralph J. Scott, Chief Engineer, Los Angeles Fire Department; and John C. Beswick, Chief, Bureau of Trade and Industrial Education, State Department of Education, a plan was agreed upon whereby one instructor was to be hired to initiate a statewide fire training program. His salary was to be paid by the State Department of Education and his expenses, by the State Fire Marshal's office.

It soon became evident that one man was facing a hopeless task, so in 1935 the late Hugh Morris, Chief of the San Mateo Fire Department, began pressing for an expansion of the program. In 1936, the Peninsula Fire Chiefs' Club lent their full support, and as a result of a study conducted by this group, recommendations for expansion of the fire training program were developed and presented to the State Department of Education.

In 1937, a statewide group was formed by the Bureau of Industrial Education, State Department of Education to discuss the reorganization of the State Fire Training Program and enactment of the legislation necessary for implementation, and in March, 1938, the first meeting of the Statewide Fire Science Advisory Committee was held in Sacramento.

The group considered a list of applicants for an expanded fire training program, and recommended that Chief David F. Glines of the South Gate Fire Department be hired as Assistant Supervisor and Instructor of Fire Training. The Advisory Committee also recommended that Assistant Chief Cecil M. Lockhard of Altadena, Captain John B. Steinhauer of Fresno, and Chief Thomas S. Ward of Red Bluff be hired as Instructors of Fire Training. These men started work on June 1, 1938, and the first expansion of the State Fire Training Program became a reality.

At the end of the first fiscal year, Assistant Chief Lockhard resigned and was not replaced. Captain Steinhauer resigned in 1941 and was succeeded by Captain Carl J. Kistle of Sacramento. The Fire Training Program continued as a three-man operation until shortly after the outbreak of World War II, when for a period of 13 months there was no activity.

In August, 1943, Thomas S. Ward was recalled to state service and appointed Temporary Supervisor of Fire Training. He conducted a one-man operation until 1945, when Carl Kistle returned from military service. Ward Cockerton was hired at that time to bring the program up to the same operating level as pre-war.

In 1946, another move was initiated to expand the program. This culminated in 1949 with enactment of SB 234, 235, and 238* which provided for a Supervisor of Fire Training and eight Traveling Instructors. It established the operating strength of the program as it is today.

Over the years, the Program has offered training services to all organized fire departments in the State. Classes offered included subjects from basic "Use of Fire Apparatus and Equipment" to such advanced

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*These bills became Chapters 1163, 1164, and 1169 of the Statutes of 1949.

courses as "Leadership and Supervision" and "Fire Administration," as well as other specialized courses.

In addition to training programs offered at the local level, statewide workshops, seminars and schools have been established. These include Fire Training Officers' Workshop, Arson and Fire Investigation Seminar, Fire Prevention Seminar, Fire Alarm Operation and Maintenance School, Staff and Command School, Junior College Fire Science Instructors' Workshop, and Oil Fire Control School.

Changes are currently being initiated in the operating philosophy of the State Fire Training Staff. Whereas in the past a large proportion of staff time had been occupied in preparing for and teaching basic courses, now Area Instructors are being trained to take over the teaching of basic courses. When the Area Instructor system is completely implemented, members of the State Fire Training Staff will concern themselves with teaching upper-level courses, preparing instructional material, conducting research, and providing supervision and coordination to the State Fire Training Program.

After 35 years of operation, the staff of the State Fire Training Program has only scratched the surface in providing educational services to the fire service of the State. Being aware of the need to develop new techniques in effectively and efficiently training firemen to a greater depth, the staff encouraged and supported the statewide study of the fireman's occupation. Their years of experience and dedication should greatly assist in the implementation of the study findings.

Chapter 2

The Study

Study Design

For several years the State Fire Training Staff had been desirous of determining the extent and need for training as required by the fire departments throughout the State. The State Fire Training Staff, working with the Professional and Educational Standards Committee of the California State Fire Chiefs' Association, identified through their discussions the need for a statewide study. The committee's recommendations were presented as a request from the California Fire Chiefs' Association to the Bureau of Industrial Education, California State Department of Education, that a study on the training and educational needs of the California fire service be conducted. The Bureau of Industrial Education accepted the request and negotiated a contract with the Division of Vocational Education at the University of California, Los Angeles, to conduct the study.

A three-man subcommittee of the Fire Training Program's State Advisory Committee - Thomas G. Dunne, City Manager, Salinas, Elmer Brouillard, Chief, Chico Fire Department, and G. Rodney Porter, Chief, Berkeley Fire Department - working with the State Fire Training Staff, identified the study problems and developed the objectives and scope to be covered by the study. This same committee worked with the research staff in finalizing the questionnaire used in collecting the data.

The study was undertaken to provide data for the accomplishment of seven objectives:

1. To identify the duties and responsibilities for each rank in the fire service.

2. To identify the training and educational requirements of each rank.

3. To determine who is best qualified to give the necessary training and education required for each rank.

4. To develop a comprehensive training program for all levels of the fire service, including specialized needs.

5. To raise the competency and efficiency of the fire service through improved training and educational methods.

6. To analyze services being rendered at the present time and determine if other services can be effectively rendered in the future.

7. To develop an organizational structure to implement the results of the study.

The study was designed to survey small (under 50 men), medium (50 to 150 men) and large (over 150 men) fire departments. Data were collected by nine fire service rank categories: Chief, Assistant Chief, Battalion Chief, Captain or Lieutenant, Engineer, Fireman, Fire Prevention Inspector, Alarm Operator, and Master Mechanic. The 90 fire departments studied included some with full-time paid personnel, some with part paid and part volunteer personnel, and one volunteer department. The data gathered were kept separate by rank and department size.

Threee assumptions were established for the study: (1) all manipulative skills require some degree of technical skill; (2) all training in the Fire Service will develop the fireman's manipulative skill so that he will perform his fire fighting duties efficiently; and (3) all necessary related technical information is now available to all firemen. The questionnaire was designed so that the collected data could be introduced

directly into fire science curriculum.

Data Collection Instrument

There were two parts to the study. Part I surveyed 377 tasks and was administered to the ranks of Captain, Engineer, Fireman, Fire Prevention Inspector, Alarm Operator, and Master Mechanic. Part II surveyed 71 supervisorial and administrative tasks and was administered to the ranks of Chief, Assistant Chief, Battalion Chief, and Captain. Captains answered both Part I and Part II.

Part I of the survey sought answers to five questions: (1) the percent of men by rank and department size performing each particular task; (2) the frequency at which the men perform the tasks; (3) the technical knowledge level required; (4) the conditions under which manipulative skill is performed; and (5) the degree of training required for the indicated task. The questionnaire for Part I was designed so that when the conditions under which manipulative skills were performed required accuracy or accuracy and speed, (for example, performing mathematical calculations) the respondent could indicate this information. Tasks of this nature were placed as a group at the end of the Part I questionnaire.

Part II of the survey sought answers to six questions: (1) the percent of men performing each particular task; (2) the frequency of which these men perform these tasks; (3) the supervisorial knowledge required in the performance of administrative and management functions and responsibilities of the task; (4) the conditions under which decision-making is performed; (5) the method used to accomplish the task; and (6) the degree of training required for the indicated task.

A set of definitions of terms was developed so that the survey respondents would interpret each task description uniformly. These definitions were:

MAINTAIN	To perform functions that assure continued service.
INSPECT	To examine by sight, hearing and touch.
TEST	To measure against a well defined standard under operating conditions.
REPAIR	To remove and replace.
MINOR REPAIR	To repair without removal.
CONSTRUCT	To form by putting together parts.
USE/UTILIZE	To employ, put into service, make use of.
INTERPRET	To explain, construe, or understand
IDENTIFY	To recognize or establish as being a particular thing.
OPERATE	To apply the proper operating treatment to perform work as by a mechanical device or apparatus.

The percent of men performing each task was computed by dividing the total number of men surveyed into the indicated number of responses for each task. This percentage was computed separately for each of the categories. The frequency with which each task was performed was recorded on a scale from one to five, from once a year to daily. The study of technical knowledge requirements used the classification of educational objectives as developed by Benjamin S. Bloom.[1] All other classification scales for each of the questions related to a task were developed so that a descriptive measurement could be identified.

The following pages present the directions for answering the

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[1] Benjamin S. Bloom, et al., Taxonomy of Educational Objectives, Cognitive Domain (New York: David McKay Company, Inc., 1965), 207 pp.

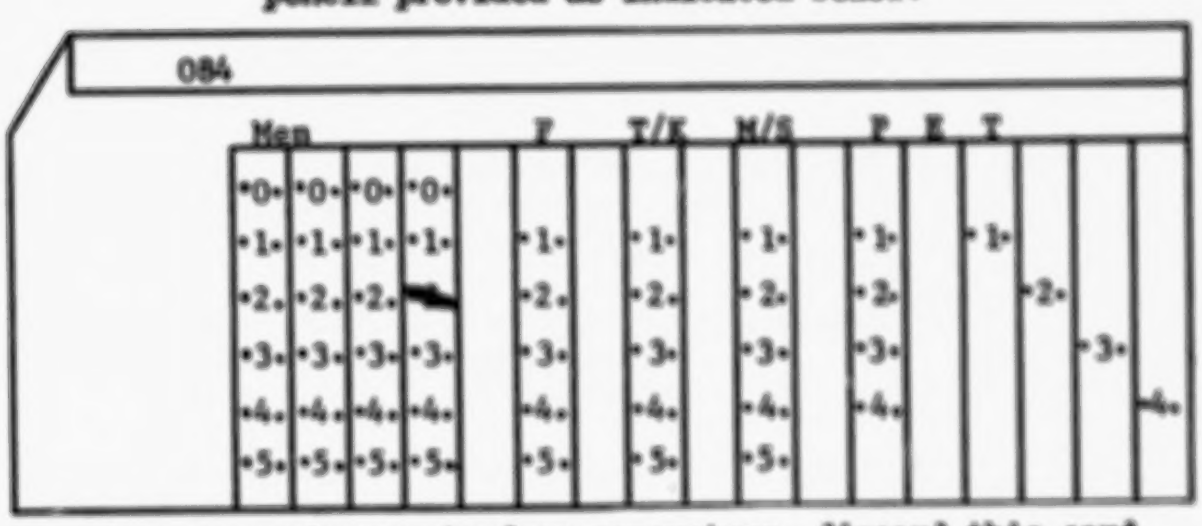
questionnaires, Part I and II, and will provide the reader with a greater opportunity for comprehension of the rating scales used with the various questions concerned with each task. The survey instrument required responses on IBM sensing cards. Each card was numbered sequentially and a separate card was used for each task. An example of how the cards were completed by a respondent for Part I is shown below using the task, "Operate A Foam Generator," Question #084 in the survey. The following examples use the same tense as that used in the directions for completing the IBM cards.

Example of Part I

Men

The number of men engaged in performing the task being considered.

Example: Suppose that two men in your same rank operate foam generators. You would mark the IBM card 084 with the pencil provided as indicated below.



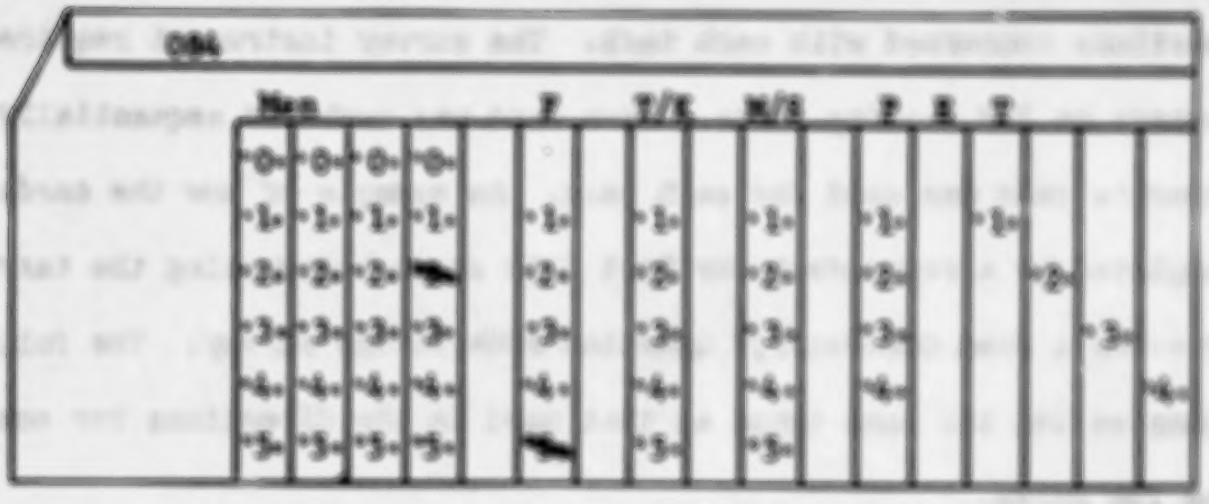
If no men in your rank operate foam generators, discard this card.

F Frequency

The frequency of use as applied to your specific situation.

The Code System:
1. Used annually
2. Used semi-annually
3. Used monthly
4. Used weekly
5. Used daily

Example: If 2 men in the previous example operate Foam generators every day, you would mark the IBM card under F as indicated below.



T/K Technical knowledge

A description of the kind of technical knowledge required of men in your rank to perform the particular task considered.

The Code System:

1. Knowledge - Knowledge of where information is to be found and the ability is to follow directions.

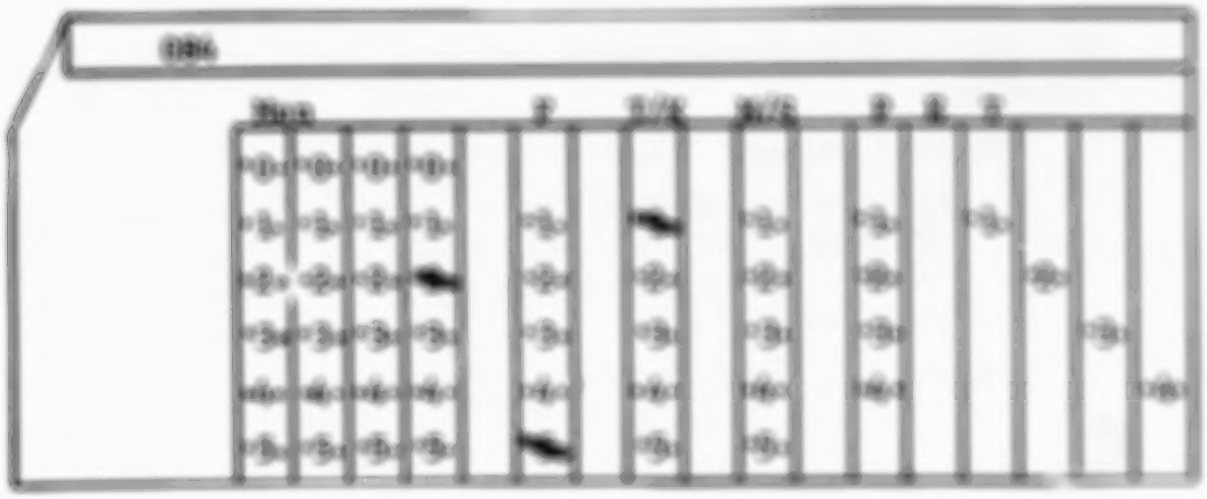
2. Comprehension - Ability to interpret information and drawings needed in performing a job.

3. Application - Knowledge and understanding of principles and the ability to apply them to specific situations.

4. Analysis - Ability to break down a malfunction into its fundamental parts in order to trouble shoot.

5. Synthesis - Ability to put together knowledge of principles and procedures to complete repairs including the construction of new or substitute parts.

Example: Following the preceding examples, if two men need knowledge of where information is to be found and ability to follow directions in operating a foam generator, you would mark the IBM card under T/K as indicated below.

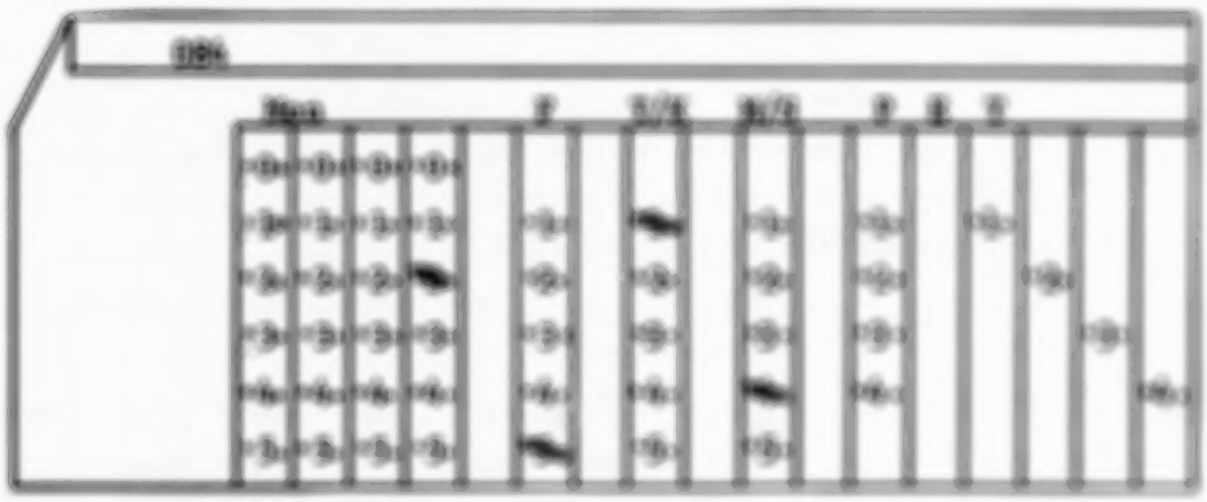


e/f Manipulative Skill

Conditions under which the manipulative task is performed.

The Code System:
1. Not needed.
2. Non-emergency conditions, no advance job planning required.
3. Non-emergency conditions and requires advance job planning.
4. Emergency, but no advance job planning required.
5. Emergency and requires advanced job planning.

Example: If two men operate a Foam Generator under emergency conditions and there is essentially no job planning required, you would mark the IDR card under e/f as indicated below.



PET Post Employment Training

The degree of post-employment training offered and who offered the training.

The Code System: Type of Training — Given By

1. No training offered — 1. Fire Department
2. Orientation or familiarization — 2. Through Junior College Level
3. Basic or general information — 3. College or University
4. Training in depth — 4. State Fire Training Program

Example: If depth training is offered in operating a foam generator and is given by the Fire Department, you would mark the IBM card under P E T as indicated below.

Beginning with IBM cards numbered [illegible] to [illegible], the M/S, Manipulative Skill, column was replaced by A/S, Accuracy and Speed.

The Code System: 1. Accuracy
2. Accuracy and Speed

Example: Topic [illegible], IBM card number [illegible], [illegible], which indicates accuracy and the card would be marked as indicated below. [illegible] of the card under the [illegible], Frequency, Technical Knowledge, and Post Employment Training columns as before, [illegible] applicable to the topic or item being considered.

This completes examples of how the IBM card for a specific task in Part I would be marked.

[illegible]

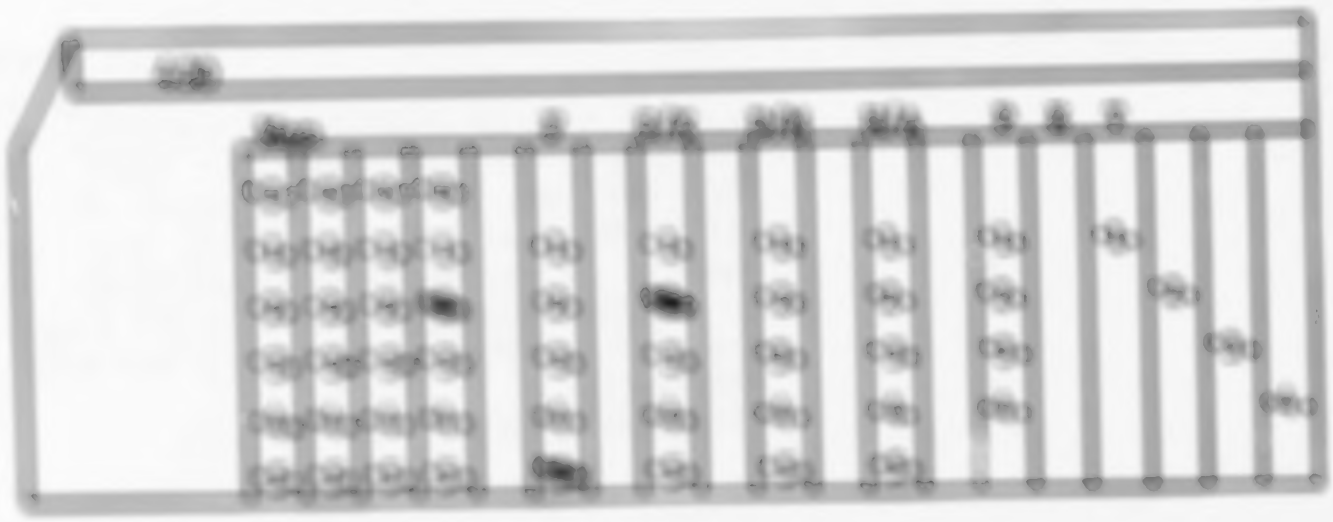
[illegible] Part II of the survey was concerned with supervisorial, administrative, and management functions and responsibilities. The procedure in completing the question on number of men engaged in performing a task was identical to the methods used in Part I. The frequency note was also identical; thus, no additional explanation is given at this point. Task (F12), "Artificial Operations of Personnel and Equipment," is used as an example. For the purpose of this report the example begins with the men and frequency columns completed.

[illegible]

The supervisorial knowledge required by you in performance of administrative and management functions and responsibilities.

The rule forces:
1. The ability to gain compliance with procedural plans and procedures.
2. Ability to identify and evaluate desirable practices and apply principles to the development of alternatives.
3. Ability to relate alternatives to objectives and evaluate policies, programs and procedures.

[illegible]: [illegible] supervisorial [illegible] of personnel and equipment, the supervisor must be able to identify and evaluate desirable practices and apply principles to the development of alternatives. [illegible] must [illegible] be applied on individual basis.

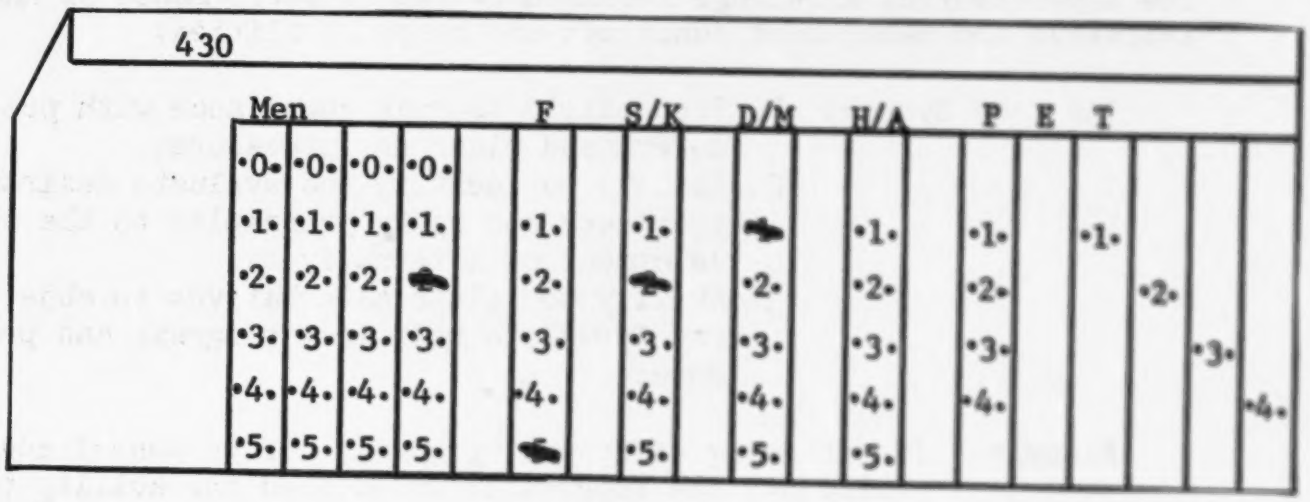


D/M

This column represents Decision-Making.

The Code System:
1. Reasonable time limit to make an estimate of the situation and arrive at a decision.
2. Critical time limit to make an estimate of the situation and arrive at a decision.
3. Reasonable time limit to present the facts of an estimate of the situation to be presented for decision.
4. Critical time limit to present facts of an estimate of the situation to be presented for decision.

Example: As a Supervisor striving to attain the objective of efficient operations of personnel and equipment, you normally would have a reasonable time limit to make an estimate of the situation and arrive at a decision. IBM card 430 would be marked as indicated below.

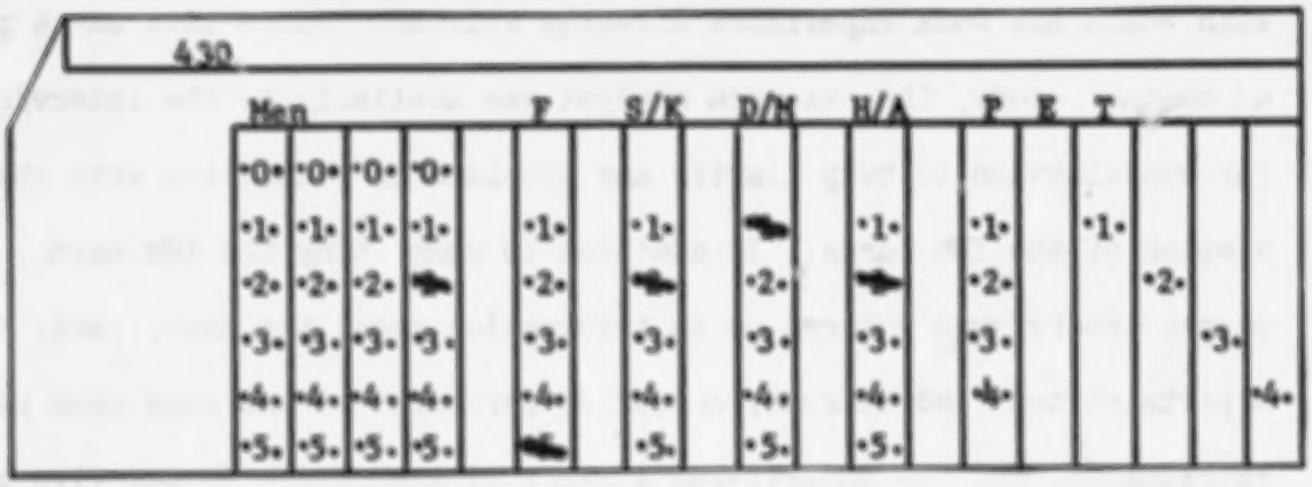


H/A

This column represents the Method of Accomplishment.

The Code System:
1. Communicative skill - accomplished through ability to communicate with others by talking and writing clearly and forcefully.
2. Knowledge of human relations - ability to work with and influence people so that you gain their confidence, loyalty, and willingness to strive for mutual objectives.
3. Technical competence - ability to plan, organize, control, seek advice and make decisions.
4. Not applicable.

Example: To achieve efficient operations of personnel and equipment you require knowledge of human relations so that the objective can be reached. IBM card 430 would be marked as indicated below.



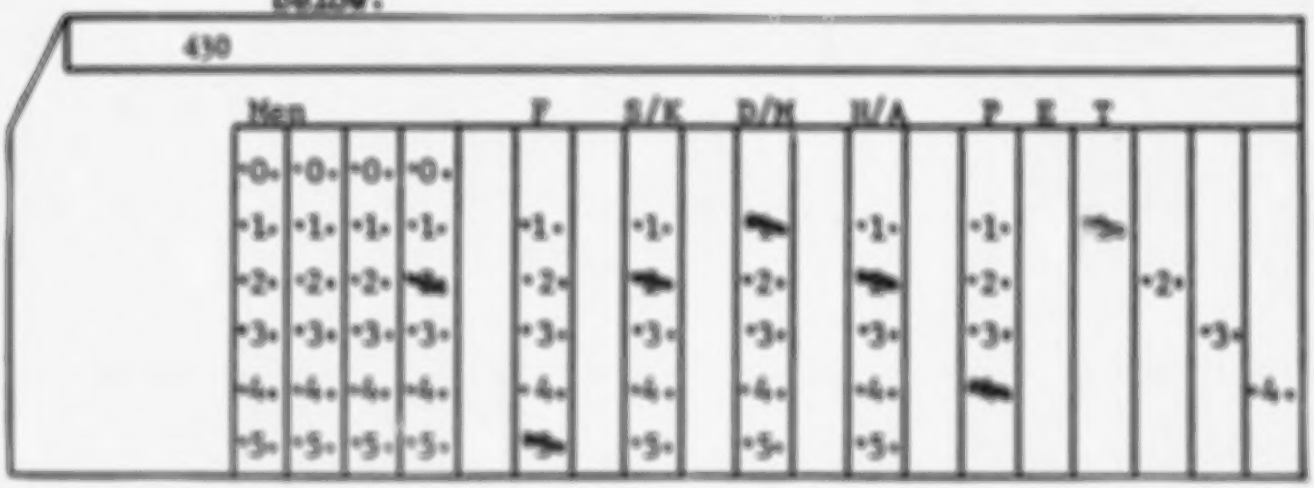
PET

This column represents the Post-Employment Training offered and who offered the training.

The Code System:

Type of Training	Given By
1. No training offered	1. Fire Department
2. Orientation or Familiarization	2. Through Junior College Level
3. Basic or general information	3. College or University
4. Training in depth	4. State Fire Training Program

Example: If the supervisorial knowledge required for efficient operations of personnel and equipment was achieved through a program of training in depth within the Fire Department, IBM card 430 would be marked as indicated below.



This completes examples of how the IBM card for Supervisorial, Administrative, and Management functions and responsibilities would be marked.

Each task in either Part I or Part II was rated in accordance with the preceding examples. Each person interviewed answered only those items with which his work experience directly related. Since this was a personal contact study, the research analyst was available to the interviewee for consultation to help clarify any problems in connection with the completion of the IBM cards. In addition to completing the IBM cards, each person interviewed entered on an information sheet his name, rank, fire department name and address, number of personnel of the same rank he represented, and the interviewee's years of experience in the fire service and at his present rank.

Other items researched included the extent and adequacy of the services provided by the California State Fire Training Program; there also was provision for inclusion of additional task activities not covered by the questionnaire. Thus, through the utilization of a survey instrument, a system for gathering and tabulating data, and the identification of participating fire departments, the data were collected, tabulated, and analyzed.

Chapter 3

Findings and Recommendations

Data Collection

William S. Bodner was the research analyst who made the field contacts and collected the data. Approximately two hours was spent with the persons interviewed in order to orient them on how to answer the questionnaire and sense mark the IBM cards. The groups meeting with him at each fire department consisted of men from each of the nine ranks listed in Table A.

TABLE A

PARTICIPATING PERSONNEL BY SIZE OF DEPARTMENT

Participants by Rank	Size of Department			Total Number of Participants
	Small	Medium	Large	
Chief	39	28	16	83
Assistant Chief	32	36	81	149
Battalion Chief	27	85	189	301
Captain	191	446	1,655	2,292
Engineer	283	480	1,532	2,295
Fireman	569	1,271	3,964	5,804
Fire Prevention Inspector	52	85	189	326
Fire Alarm Operator	48	109	112	269
Master Mechanic	22	19	100	141
Participants by size of departments	1,263	2,559	7,838	11,660
Departments by size	41	30	19	90

These men answered the questionnaire in relation to all the men of their respective ranks. The research analyst did not leave the fire department until he was satisfied that all interviewees understood how to complete the questionnaire. The research analyst returned within a week to ten days to pick up the completed questionnaires and IBM cards.

Ninety fire departments participated in the study. These departments are listed in Appendix A. There were 41 small, 30 medium and 19 large departments surveyed. Table A displays the number of participating personnel by rank and fire department size. There was a total coverage of 11,660 fire service personnel.

Data collected for each of the tasks on sense marked IBM cards were processed and key punched. By means of computer programming, the information was stored on tape and then processed through an IBM 7094 computer. The computer program was developed by Edwin W. Banhagel of Hughes Aircraft Company.[2] The computer information was printed out and arranged as shown in Tables I through 52 of this report.

Advisory Committees

The tabulated data were brought to the Statewide Fire Science Advisory Committee. Names of the members of this committee are listed in Appendix B. The purpose of the meeting was to make a preliminary review of the data and establish guidelines for the activities at six Regional Advisory Committee meetings. Six Regional Advisory meetings were held throughout the state to review the survey data and to establish recommendations for pre-employment, pre-promotional, and post-promotional

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[2] A detailed description of the program can be found in Allen, Lano, and Witt, A Study of the Aviation Mechanics Occupation (California State Department of Education and the University of California, Los Angeles, 1966), pp. 159-164.

training for all the ranks studied. Each committee had 12 members, representing all ranks. (See Appendix C.) The committees evaluated the results and made recommendations. A second Statewide Advisory Committee meeting then was held, at which time the recommendations from the Regional Advisory Committees were reviewed and final recommendations were made.

Interpretation of Tables

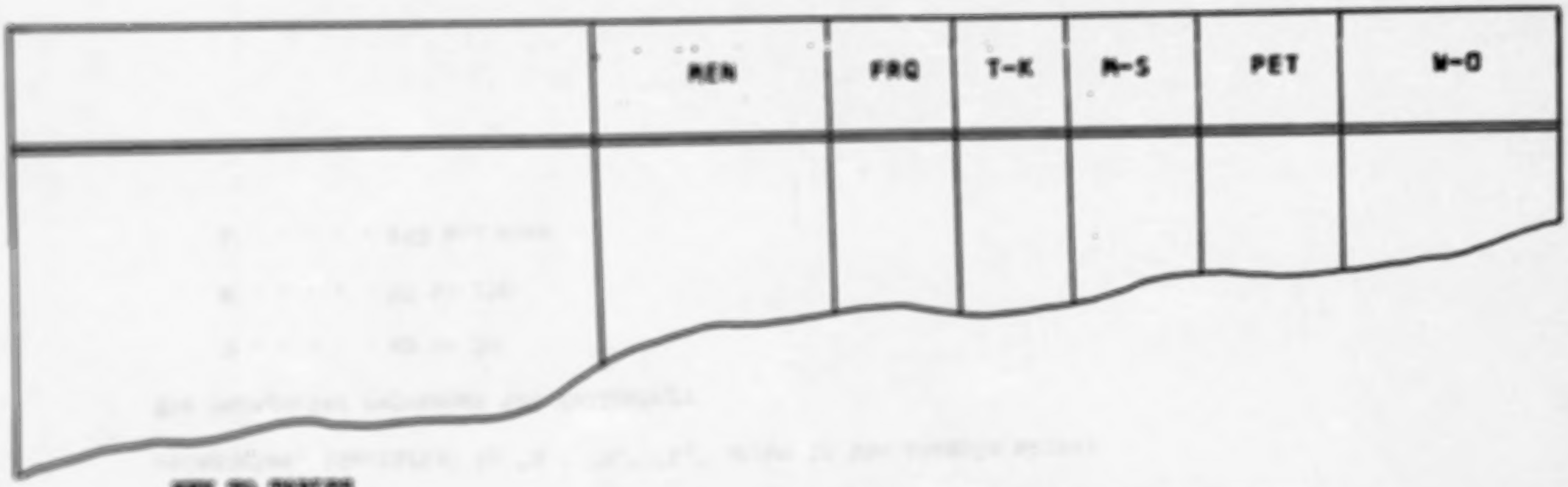
The next section of this chapter contains the survey findings, the post-employment training received by those in the fire service, and the Statewide Advisory Committee recommendations. On each left-hand page is a table that is a photocopy of the IBM print-out for the survey findings. To assist in reviewing the findings only a maximum of three tasks appear in the table on that page. On the facing right-hand page there are three items presented for each of the tasks on the corresponding table on the left-hand page. These three items are: (1) a brief discussion concerning the task and statistical highlights as displayed in the table; (2) a table that displays the post-employment training for the particular task; and (3) the Statewide Advisory Committee recommendations for suggested pre-employment, pre-promotional, and post-promotional training by individual ranks.

In reviewing the discussion item for each task the reader should be aware of the many additional bits of information that are statistically displayed in the table on the left-hand page. In reviewing the second item, which is a table that displays the post-employment training for that particular task as revealed by the study, the reader must be cognisant that the percent indicating training is in relation to the total number of men for the various size departments as shown in Table A. The Post-Employment Training Table displays the percent of men by size of

department, the depth of training, and where the training was obtained. The third item related to each task is the State Advisory Committee recommendations for suggested pre-employment, pre-promotional and post-promotional training by individual ranks. A code letter is incorporated in each of the recommendations indicating suggested site of the training which would be given. The table also displays the percent and technical level for the task for all men within each rank and for all departments participating in the study.

For ease in reading, this report, with explanations, data, interpretations and recommendations, should be turned 90 degrees clockwise so that the print-out appears above the explanatory material. To facilitate interpretation of the data, the following explanations are given:

HOW TO READ THE TABLES



KEY TO TABLES

Data are presented in six columns with the headings identified as "REN", "FRQ", "T-K", "M-S", "PET", "M-O", shown in the example above.

The headings represent the following:

REN . . . . . The percentage of men engaged in performing the task being considered.

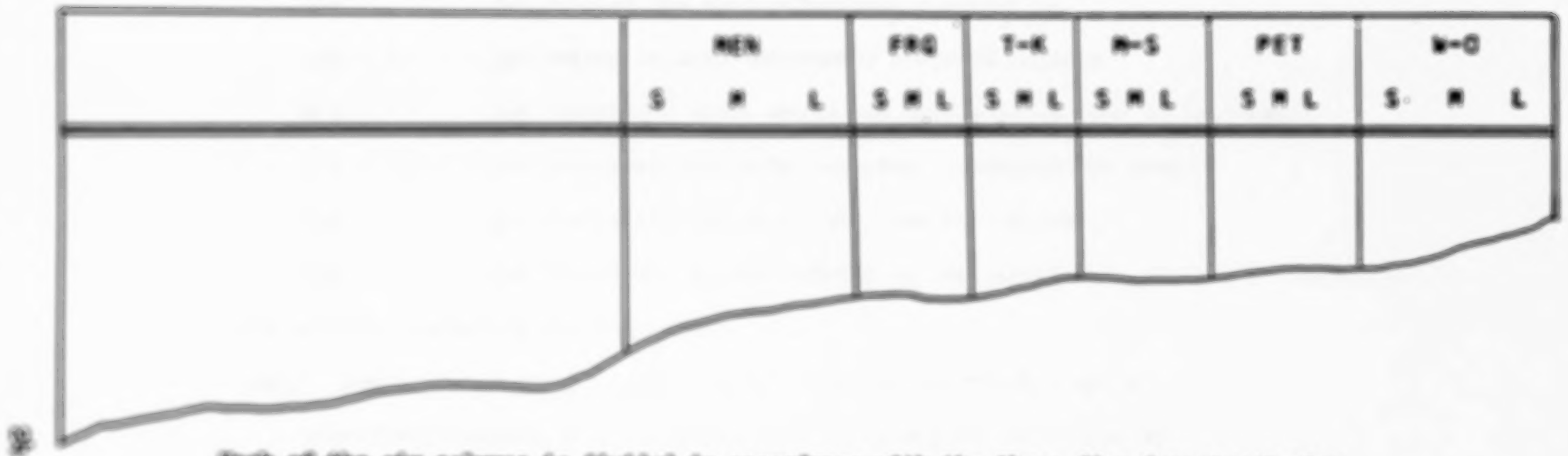
FRQ . . . . . The frequency with which the task is performed.

T-K . . . . . The technical knowledge required to perform the task.

M-S . . . . . The conditions under which the manipulative task is performed.

PET . . . . . The degree of post-employment training offered.

M-O . . . . . Who offered the post-employment training.



Each of the six columns is divided in accordance with the three fire department size categories, identified by "S," "M," "L," shown in the example above:

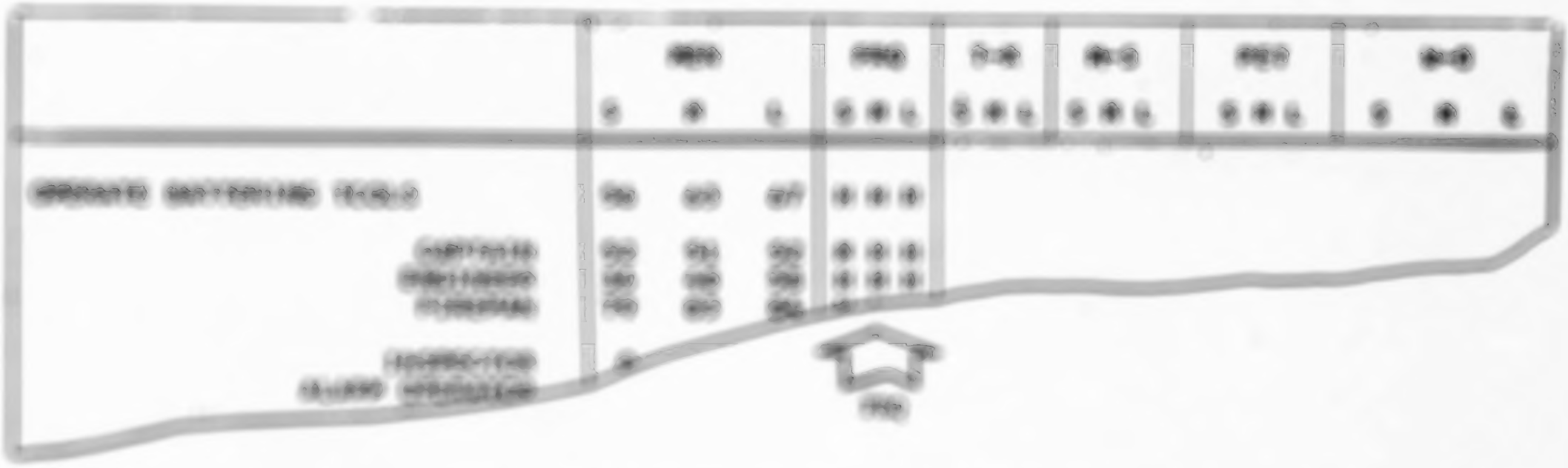
The categories represent the following:

S . . . . . up to 50

M . . . . . 50 to 250

L . . . . . 250 and over

(1) ..... Data presented in this column represent the percentage of men engaged in performing the task being considered.



[illegible] The "[illegible]" column refers to the minimal knowledge required of one of each rank to perform the particular task considered. The code system:

1 . . . Knowledge = Knowledge of where information is to be found and the ability to follow directions.

2 . . . Comprehension = Ability to interpret information and knowledge needed to performing a job.

3 . . . Application = Knowledge and understanding of principles and the ability to apply them to specific situations.

4 . . . Analysis = Ability to break down a malfunction into the fundamental parts in order to troubleshoot.

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE BATTERING TCCLS	56	63	67	H	H	H	3	3	3	5	5	5						
CAPTAIN	52	51	52	M	H	H	3	3	3	5	3	5						
ENGINEER	36	48	58	H	H	H	3	3	3	4	4	5						
FIREMAN	79	83	84															
INSPECTOR																		
ALARM OPERATOR																		

M-S

Data applicable to the "M-S" column in the example above are represented by the following numbers denoting the conditions under which the manipulative task is performed. The code system:

1 . . . . . Not needed.

2 . . . . . Non-emergency conditions, no advance job planning required.

3 . . . . . Non-emergency conditions and requires advanced job planning.

4 . . . . . Emergency, but no advanced job planning required.

5 . . . . . Emergency and requires advanced job planning.

	MEN			FRQ	T-R	R-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
OPERATE BATTERING TCCLS	56	63	67	M M M	3 3 3	5 5 5	3 4 3	
CAPTAIN	52	51	52	M M M	3 3 3	5 3 5	3 4 4	
ENGINEER	56	48	58	M M M	3 3 3			
FIREMAN	79	83						
INSPECTOR								
PLANT OPERATOR								

PET

PET . . . . . This column represents the Post-Employment Training. The code system:

1 . . . No training offered.

2 . . . Orientation or familiarization.

3 . . . Basic or general information.

4 . . . Training in depth.

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE BATTERING TOOLS	56	63	67	M	M	M	3	3	3	5	5	5	3	4	3	1	1	1
CAPTAIN	52	51	52	M	M	M	3	3	3	5	3	5	3	4	4	1	[illegible]	[illegible]
ENGINEER	36	48	58	M	M	M	3	3	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FIREMAN	79	83	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ALARM [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

W-O

W-O . . . . . This column represents who offered the Post Employment Training.

The code system:

1 . . . Fire Department.

2 . . . Junior College.

3 . . . College or University.

4 . . . State Fire Training Program.

NOTE: When more than one number appears in the W-O column, example under "S" 134 $\begin{pmatrix} S & M & L \\ 134 & 1 & 1 \end{pmatrix}$ It indicates that training was received equally from more than one training agency identified in the above code.

	MEN			FRQ	T-K	A-S	PET	M-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE FEDERAL LAWS	30	40	32	M M M	3 3 3	1 1 1	2 3 3	1	1	1
CAPTAIN	40	42	47	M M M	1 3 1	1 1 1	3 3 3	1	1	1
ENGINEER	28	30	21	M M M	3 3 3	1 1 1	2 2 3	1	1	
FIREMAN	21	43	29	M M M	3 3 3	1 1 1				
INSPECTOR	34									
ALARM OPERATOR										
MECHANIC										

A-S

Beginning with Table 36, the "M-O" column is replaced by the "A-S" column, as in the example above. The applicable "A-S" data are represented by the following numbers denoting whether accuracy and/or speed is required in performing each task:

1 . . . . . The task must be performed with accuracy.

2 . . . . . The task must be done with accuracy and speed.

NOTE: Each rank under each task has its own data. Data opposite each task (top line) is the total average for all the ranks listed below the task.

Table 32 contains the statistics for Part II of the study, "Supervisory, Administrative, and Management Functions and Responsibilities." The first two columns, "Num" and "FRQ", use the same coding system as the data displayed in preceding tables.

	NUM			FRQ			S-K			D-M			M-A			PET			W-C		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
SUPERVISION, ORIENTATION, AND ASSIGNMENT OF PERSONNEL	35	25	3	1	1	1	2	2	2												
CHIEF	02	02	09	1	1	10															
ASSISTANT CHIEF	08	07	33																		
SUPERVISION CHIEF CLERICAL	04																				

S-K

"S-K" . . . . . The Supervisorial knowledge required in performance of administrative and management functions and responsibilities.

The Code System:

1 . . . The ability to gain compliance with predetermined plans and procedures.

2 . . . Ability to identify and evaluate desirable practices and apply principles to the development of alternatives.

3 . . . Ability to relate alternatives to objectives and formulate policies, programs and procedures.

	PEA			FRG			S-A			D-A			M-A			PET			W-D		
	S	P	L	S	P	L	S	P	L	S	P	L	S	P	L	S	P	L	S	P	L
ACCION PERSONNEL	75	78	82	*	*	*	2	2	1	1	1	1									
[illegible]	87	88	94	*	*	*	3	3	1	1	1	1									
ACCESSORY [illegible]	78	94	81	*	*	*	2	1	1	1	1	1									
[illegible]	83	82	73	[illegible]																	
[illegible]	82	[illegible]																			

"D-A" . . . . . This volume represents Decision-Making.

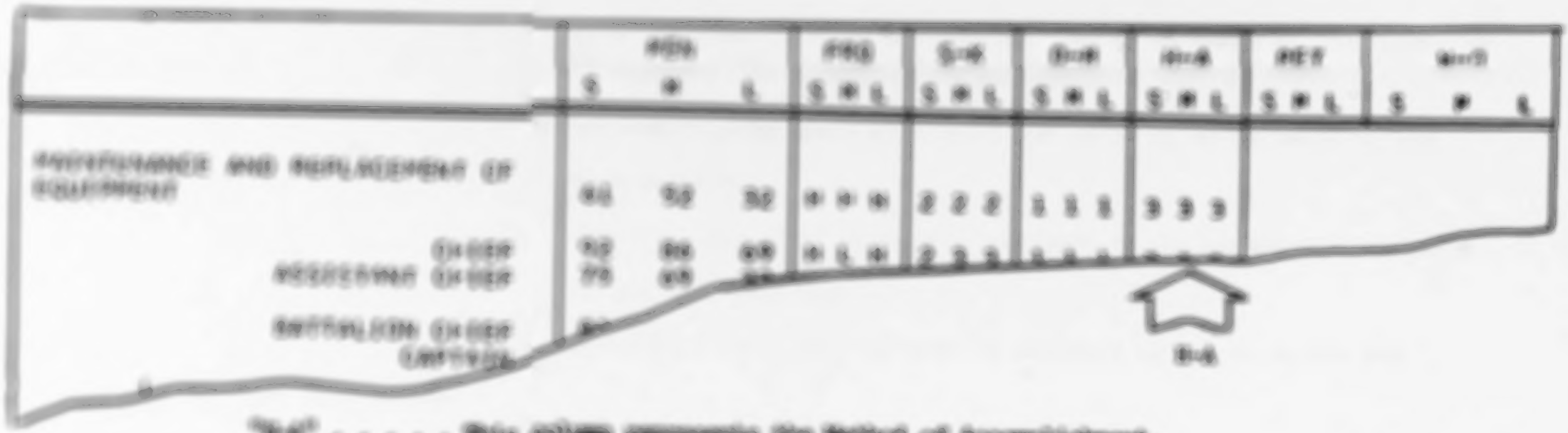
The Code System:

1 . . . Reasonable time limit to make an estimate of the situation and arrive at a decision.

2 . . . Critical time limit to make an estimate of the situation and arrive at a decision.

3 . . . Reasonable time limit to present the facts of an estimate of the situation to be presented for decision.

4 . . . Critical time limit to present facts of an estimate of the situation to be presented for decision.



"D-6" . . . . . This column represents the Method of Accomplishment.

The Code System:

1 . . . Communicative skill - accomplished through ability to communicate with others by talking and writing clearly and forcefully.

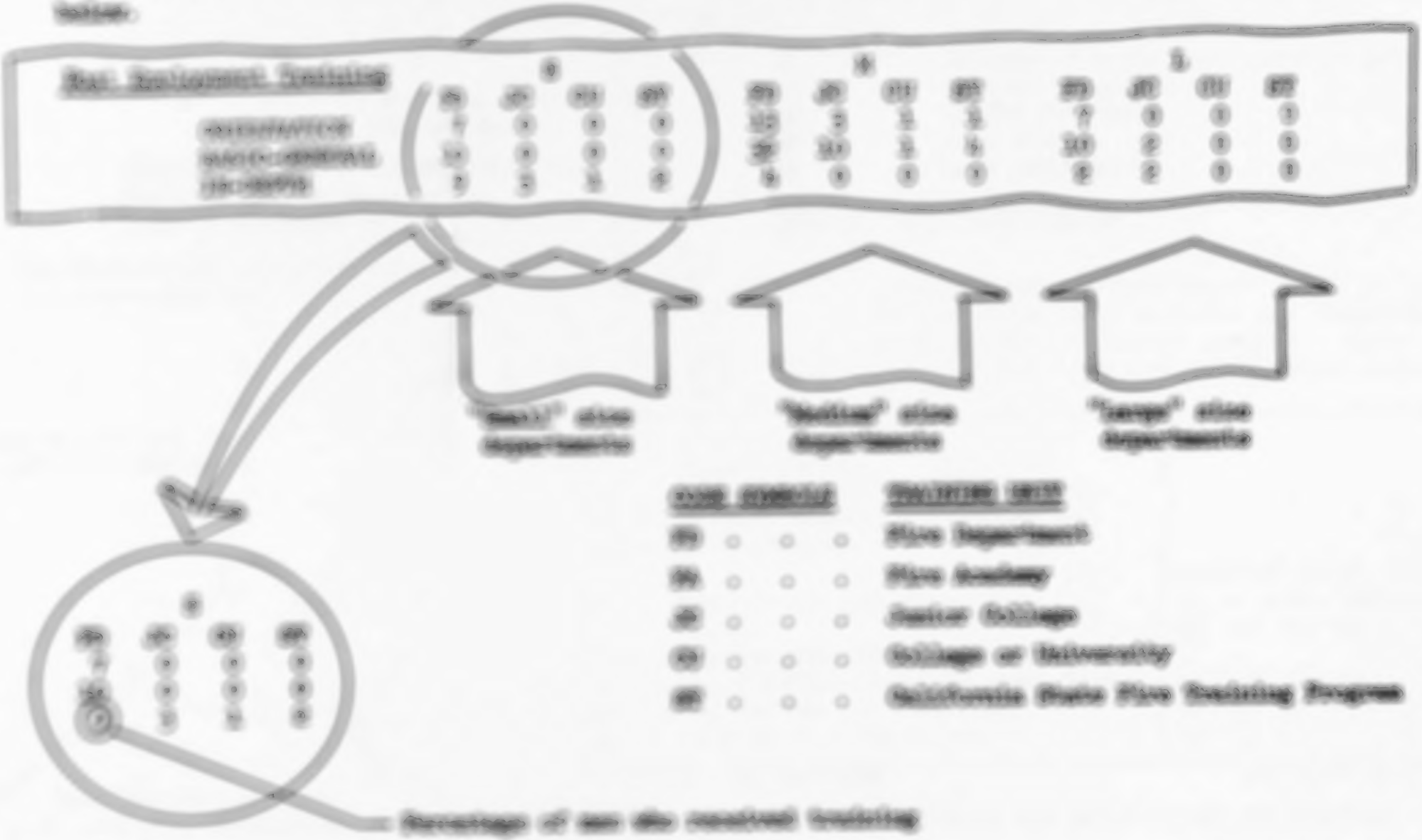
2 . . . Knowledge of human relations - ability to work with and influence people so that you gain their confidence, loyalty, and willingness to strive for mutual objectives.

3 . . . Technical competence - ability to plan, organize, control, and advise and make decisions.

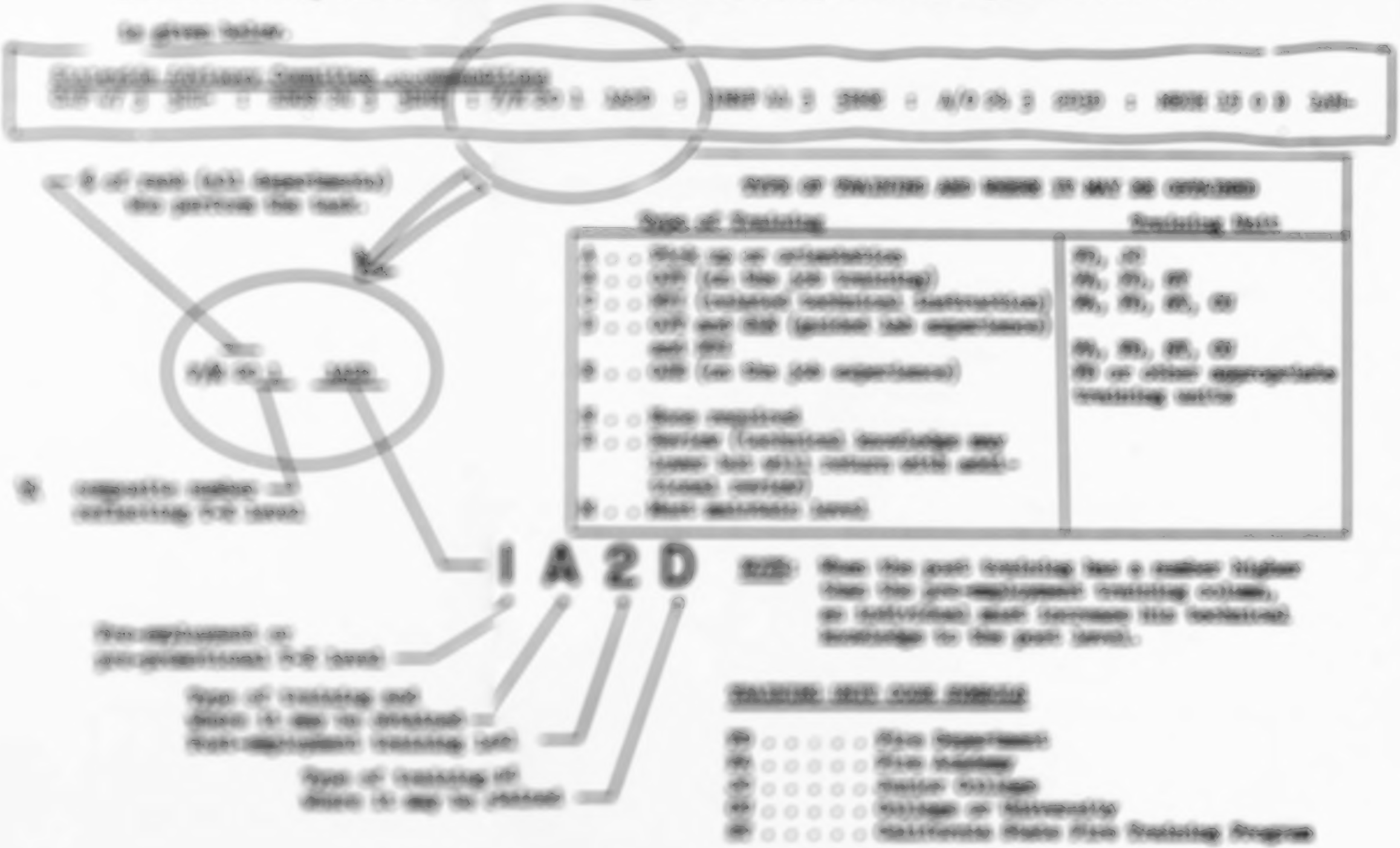
4 . . . Not applicable.

NOTE: D-5 and D-6 are the same as in previous tables.

Each employment training is displayed in a table, as shown. Explanations of the code is given below.



Appendix: Military Position recommendations appear in a table, as shown. Explanation of the code is given below.


1 A 2 D
Type of training
Training Unit
Type of training and unit to be provided
Type of training and unit to be provided
Type of training and unit to be provided

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

TABLE 1. BUILDING AND GROUNDS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE AND MAINTAIN FIRE STATION HEATING AND COOLING EQUIPMENT	43	38	21	H H H	3 3 3	2 2 3	3 2 3	1	1	1
CAPTAIN	49	25	26	H H H	3 3 1	3 2 2	3 2 2	1	1	1
ENGINEER	46	37	41	H H H	3 3 3	3 2 3	3 2 3	1	1	1
FIREMAN	44	48	13	H H H	3 2 3	2 3 3	2 3 3	1	1	1
INSPECTOR	8	1	6	M L M	4 1 2	2 3 3	2 1 3	1	0	1
ALARM OPERATOR	21	14	11	H H H	3 3 3	2 3 3	3 2 3	1	1	1
MECHANIC	41	32	15	H H M	3 3 4	2 3 2	2 1 3	1	13	1
MAKE MINOR STATION REPAIRS	79	73	26	H H H	3 3 3	3 2 3	3 3 3	1	1	1
CAPTAIN	74	36	4	H H H	3 3 5	2 2 3	3 3 3	1	1	1
ENGINEER	79	83	66	H H H	3 3 3	3 2 2	3 3 3	1	1	1
FIREMAN	91	94	22	H H H	3 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	10	5	1	M H M	3 5 4	3 2 5	3 3 4	1	1	1
ALARM OPERATOR	33	4	10	H M H	3 5 4	2 2 2	3 3 3	1	1	1
MECHANIC	73	47	13	H M H	3 3 4	3 2 2	3 1 3	1	1	1
MAINTAIN WATER, GAS, AND ELECTRICITY	19	12	8	H H H	3 3 1	3 2 2	3 3 2	1	1	1
CAPTAIN	16	15	6	H H H	3 3 3	3 3 2	3 2 3	1	1	1
ENGINEER	16	15	33	L H H	3 3 3	3 2 2	3 3 3	1	1	1
FIREMAN	25	11	0	L H H	3 3 1	3 2 3	3 3 2	1	1	1
INSPECTOR	8	0	0	H L L	3 0 0	2 0 0	3 0 0	1	0	0
ALARM OPERATOR	0	0	4	L L H	0 0 3	0 0 3	0 0 3	0	0	1
MECHANIC	18	5	10	H H H	4 3 1	3 3 2	3 4 2	1	3	1

* OPERATE AND MAINTAIN FIRE STATION HEATING AND COOLING EQUIPMENT Involves operating electrical, gas and oil-fired heating equipment as well as electrical and gas type cooling equipment. Includes inspecting and cleaning such equipment, performing minor repairs, and requesting servicing or repairs when necessary. Nearly half the captains, engineers and firemen in small departments perform this task at a high level of frequency; only 20 percent of these ranks in large departments perform this function.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	18	0	0	0	10	0	0	0	8	0	0	0
BASIC-GENERAL	21	0	0	1	22	0	0	3	13	0	0	0
IN-DEPTH	0	0	0	0	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 29 3 2[illegible] : ENGR 44 3 3[illegible] : F/M 18 3 1[illegible] : INSP 7 2 0 2[illegible] : A/O 13 3 1[illegible] : MECH 19 3 2[illegible]

* MAKE MINOR STATION REPAIRS Requires painting and carpentry skills as well as the ability to make minor repairs in the fields of plumbing, electrical equipment, glazing, roofing, floor covering, and cement work. The lack of special crews in small departments makes it mandatory that all ranks perform this duty. In medium departments engineers and firemen perform the job. In many large departments special maintenance and repair crews are available for such work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	1	1	1	16	0	0	0	4	0	0	0
BASIC-GENERAL	52	1	0	1	42	0	0	2	32	0	0	0
IN-DEPTH	1	0	0	0	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 14 3 3[illegible] : ENGR 71 3 3[illegible] : F/M 31 3 1[illegible] : INSP 2 4 0 2[illegible] : A/O 22 4 1[illegible] : MECH 25 3 2[illegible]

* MAINTAIN WATER, GAS, AND ELECTRICITY Involves inspecting utility service equipment, determining malfunction, and requesting repair work, as necessary. In large departments engineers perform this job as a part of their station maintenance responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	8	0	0	0	9	3	3	1	6	0	0	0
IN-DEPTH	1	0	0	0	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 9 3 2[illegible] : ENGR 29 3 2[illegible] : F/M 5 3 1[illegible] : INSP 1 0 0 2[illegible] : A/O 3 0 1[illegible] : MECH 10 2 0 1[illegible]

TABLE 1. BUILDING AND GROUNDS CONTINUED

	PEN			FRQ			T-O			M-S			PET			M-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAINTAIN FIRE STATION GROUNDS	68	71	73	M	M	M	3	3	3	2	2	2	3	2	3	1	1	1
CAPTAIN	61	23	35	M	M	M	3	3	3	2	3	3	3	3	3	1	1	1
ENGINEER	74	81	72	M	M	M	3	3	3	3	2	2	3	3	2	1	1	1
FIREMAN	79	93	96	M	M	M	3	3	3	2	2	2	3	2	3	1	1	1
INSPECTOR	10	1	0	M	M	L	3	1	0	3	2	0	3	1	0	1	0	0
ALARM OPERATOR	21	0	4	M	L	M	3	0	3	3	0	2	3	0	3	1	0	1
MECHANIC	9	11	4	L	M	M	3	3	0	3	3	3	1	3	1	0	24	1
MAINTAIN TRAINING FACILITIES	35	39	15	M	M	M	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	50	27	29	M	M	M	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	31	43	16	M	M	M	3	1	3	3	3	3	3	3	3	1	1	1
FIREMAN	37	47	9	M	M	M	3	3	3	3	2	3	3	2	3	1	1	1
INSPECTOR	12	2	6	M	M	L	3	4	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	0	4	9	L	M	M	0	3	3	0	3	3	0	3	3	0	1	1
MECHANIC	23	26	3	M	L	M	3	3	3	3	3	3	4	2	3	1	1	2

* **MAINTAIN FIRE STATION GROUNDS** Involves planting, trimming, watering, and fertilizing lawns, shrubs, trees, and other plants. Captains in small departments are actually involved in this job because of the lack of manpower. Firemen and engineers in departments of all sizes perform this function at a high level of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	18	0	0	1	31	0	0	2	27	0	0	0
BASIC-GENERAL	36	0	0	1	30	0	0	0	28	0	0	0
IN-DEPTH	1	0	0	0	2	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations
CAP 38 3 3HR- : ENGR 73 3 2HRS : F/M 33 3 1HR : INSP 1 3 0 2HR- : A/O 3 3 0 1HR : MEMB 6 3 0 1HR-

* **MAINTAIN TRAINING FACILITIES** Involves inspecting, cleaning and repairing drill towers, drafting pits, training props and other training facilities. May involve constructing cutaways, models, hot-fire props, and similar training aids. Captains in small departments actually perform this job. The low percentage of firemen who perform this job in large departments reflects the fact that training facilities are usually separated from fire stations in large departments.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	12	0	0	1	4	0	0	2
BASIC-GENERAL	20	1	0	3	11	1	0	3	3	0	0	0
IN-DEPTH	2	0	0	1	6	4	2	4	6	1	4	1

Statewide Advisory Committee recommendations
CAP 31 3 3HRS : ENGR 21 3 2HRL : F/M 18 3 1HR : INSP 6 3 0 2HR- : A/O 8 3 1HR : MEMB 3 3 2HRS

TABLE 2. FLAG AND PARADE ETIQUETTE

USE PROCEDURES FOR DISPLAYING COLORS																			
USE PROCEDURES FOR HANDLING COLORS																			

- **[illegible]** Involves use of research procedures to assay, value and issue, and grant options. Approximately 25 percent of engineers, engineers, and drivers are responsible for these procedures.

Post Employment Smoking	0				1				2			
	(0)	(0)	(1)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(1)	(0)
[illegible]	12	0	0	0	12	0	0	1	12	0	0	1
[illegible]	12	1	0	1	63	0	0	0	12	0	0	1
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0

Statistically Significant Condition recommendations

[illegible]

- **[illegible]** Involves research methods of showing support for displayed values, holiday values, missing values, and for destroying unusable values. In small and medium businesses where only the engineer, engineers, and drivers are responsible for this; in large businesses, the engineer is likely to have this responsibility.

Post Employment Smoking	0				1				2			
	(0)	(0)	(1)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(1)	(0)
[illegible]	12	0	0	0	12	0	0	1	12	0	0	1
[illegible]	12	1	0	1	63	0	0	0	12	0	0	0
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0

Statistically Significant Condition recommendations

[illegible]

TABLE 3. EQUIPMENT

	[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			[illegible]		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND MAINTAIN LEATHER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FIREMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ALARM OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND MAINTAIN SALVAGE COVERS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FIREMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ALARM OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND MAINTAIN HOSE AND COUPLINGS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FIREMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ALARM OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- **[illegible]** [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- **[illegible]** [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- **[illegible]** [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- [illegible] [illegible] [illegible]

TABLE 5. EQUIPMENT CONTINUED

	[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			[illegible]		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND MAINTAIN LIFESAVING EQUIPMENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FISHERMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND MAINTAIN TOOLS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FISHERMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECT AND RECHARGE [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAPTAIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ENGINEER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FISHERMAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSPECTOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] OPERATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MECHANIC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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TABLE 3. EQUIPMENT CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-D		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INSPECT, TEST, AND MAINTAIN ROPES	66	66	69	M	M	M	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	54	56	65	M	M	L	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	80	71	80	M	M	M	3	3	3	3	2	3	3	3	3	1	1	1
FIREMAN	76	79	74	M	M	M	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	4	0	0	L	L	L	3	0	0	2	0	0	4	0	0	1	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	21	3	H	H	M	3	3	3	3	3	3	3	4	3	1	1	1
INSPECT, TEST, AND MAINTAIN LADDERS	74	68	72	M	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	61	52	66	M	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	90	69	84	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	86	85	77	M	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	6	0	0	M	L	L	3	0	0	2	0	0	4	0	0	1	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	27	32	23	L	M	H	4	3	3	3	3	3	3	2	3	1	1	1
INSPECT AND REPLENISH FIRST AID EQUIPMENT	60	62	53	H	H	H	3	3	3	2	3	3	3	3	3	1	1	1
CAPTAIN	50	63	75	M	M	M	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	73	57	84	H	H	H	3	3	3	3	2	3	3	3	3	1	1	1
FIREMAN	66	74	36	H	H	H	3	3	3	3	2	3	3	3	3	1	1	1
INSPECTOR	10	5	26	H	L	H	3	3	3	2	1	1	3	2	3	1	1	1
ALARM OPERATOR	19	10	4	H	M	M	3	1	3	2	1	4	3	2	4	1	1	1
MECHANIC	14	0	3	H	L	M	3	0	3	3	0	3	3	0	3	1	0	1

* INSPECT, TEST, AND MAINTAIN ROPES Includes preparing new rope for service, inspecting and testing rope after service, and at specified intervals, splicing rope and coiling rope. Ropes are inspected and sometimes tested. Ropes are usually discarded rather than repaired.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	15	1	0	5	15	1	0	2	2	0	0	1
BASIC-GENERAL	38	6	0	16	40	7	0	17	46	0	0	2
IN-DEPTH	10	3	0	7	10	2	2	6	21	0	0	1

Statewide Advisory Committee recommendations

CAP 62 3 3BRE : ENGR 79 3 3BME : F/M 75 3 1A3B : INSP 1 0 D 3BRE : A/O 0 0 D 1AN- : MECH 7 3 D 2BME

* INSPECT, TEST, AND MAINTAIN LADDERS Includes inspecting ladder beams and rungs on all types of ladders; trusses, pawls, halyards, pulleys and cables on ladders which include such items, and hydraulic systems on aerial ladders and elevated platforms; testing rungs and beams on both aerial and ground ladders; and cleaning, smoothing and coating ladders as required. Captains usually inspect ladders and other ranks usually perform actual testing and maintenance functions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	15	4	0	8	15	4	0	5	2	0	0	0
BASIC-GENERAL	41	5	0	20	36	5	0	14	47	0	0	2
IN-DEPTH	18	6	0	11	17	6	2	13	21	0	0	3

Statewide Advisory Committee recommendations

CAP 65 3 3BRE : ENGR 84 3 3BME : F/M 79 3 1A3B : INSP 1 0 D 3BRE : A/O 0 0 D 1AN- : MECH 25 3 2B3B

* INSPECT AND REPLENISH FIRST AID EQUIPMENT Includes examining, cleaning and testing resuscitators and resuscitator components, filling resuscitator cylinders; examining and cleaning stretchers, splints, blankets and miscellaneous first aid equipment; and inventorying, examining, cleaning and refilling first aid kits of various sizes. Captains are usually responsible for inspection. This is done at a moderate rate of frequency. Engineers in large departments and firemen in medium departments are involved with maintenance of first aid supplies and equipment, at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	15	1	0	2	14	0	0	3	3	0	0	0
BASIC-GENERAL	33	4	0	7	31	1	0	3	31	5	0	2
IN-DEPTH	10	1	0	5	15	12	4	8	17	0	0	1

Statewide Advisory Committee recommendations

CAP 70 3 3BRE : ENGR 79 3 3BME : F/M 45 3 1A3B : INSP 21 3 3BME : A/O 7 3 1A2B : MECH 4 3 D 1B2B

TABLE 3. EQUIPMENT CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
INSPECT EQUIPMENT AFTER RUNS	65	68	72	H H H	3 3 3	3 2 3	3 3 3	1	1	1
CAPTAIN	68	46	64	H H H	3 3 3	3 2 3	3 4 3	1	1	1
ENGINEER	94	83	88	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	60	80	77	H H H	3 3 3	2 3 3	3 3 3	1	1	1
INSPECTOR	8	4	0	H H L	3 1 0	2 2 0	4 2 0	1	1	0
ALARM OPERATOR	13	0	0	H L L	3 0 0	4 0 0	4 0 0	1	0	0
MECHANIC	41	21	15	H H H	4 3 4	3 2 3	3 4 3	1	1	1
INSPECT, TEST, AND MAINTAIN BREATHING APPARATUS	69	67	81	H H H	3 3 3	3 3 3	3 4 3	1	1	1
CAPTAIN	59	48	62	H H H	3 3 4	3 3 3	4 3 4	1	1	1
ENGINEER	89	78	100	H H H	3 3 4	3 3 3	4 4 4	1	1	1
FIREMAN	74	81	79	H H H	3 3 3	3 3 3	3 4 3	1	1	1
INSPECTOR	10	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0
ALARM OPERATOR	13	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0
MECHANIC	18	21	8	H H M	4 3 3	2 3 3	3 4 3	1	1	1
MAKE HYDRANT FLOW TEST	49	42	31	L L L	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	56	48	57	L L L	3 3 3	3 3 3	3 3 3	1	1	1
ENGINEER	65	41	16	L L L	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	46	47	28	L L L	3 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	21	12	22	L L H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	2 0 0	3 0 0	12	0	0
MECHANIC	27	5	7	L L H	3 3 5	3 2 3	2 4 2	1	1	1

* INSPECT EQUIPMENT AFTER RUNS Fire apparatus and equipment must be maintained in a constant state of readiness and a thorough inspection is required following each use. This job is usually the responsibility of the engineer under the supervision of the captain. Firemen usually assist the engineer in performing the inspection and other work necessary to return equipment to service.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	3	13	2	1	2	18	0	0	0
BASIC-GENERAL	31	8	1	6	29	2	0	7	45	2	0	1
IN-DEPTH	22	4	1	12	22	7	3	10	10	0	0	2

Statewide Advisory Committee recommendations

CAP 63 3 3BRE : ENGR 88 3 3BME : F/M 75 3 1A2B : INSP 2 1 D 2BME : A/O 2 0 D 1AN- : MECH 19 4 2BME

* INSPECT, TEST, AND MAINTAIN BREATHING APPARATUS May involve various types of breathing apparatus, such as self-contained air or oxygen types, canister types, oxygen regenerating types, etc. Inspection and testing activities involve face-pieces, hoses, regulators, valves, cylinders, gauges, canisters, harness straps and components. Maintenance activity includes cleaning breathing apparatus and components, replacing face-pieces, hoses, canisters, and cylinders, refilling cylinders, and maintaining records. This job is usually the responsibility of the engineer under the supervision of the captain. Firemen usually assist the engineer in performing the inspection and other work necessary to return equipment to service.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	0	0	2	5	1	0	0	3	0	0	1
BASIC-GENERAL	28	5	0	8	30	2	0	11	23	0	0	1
IN-DEPTH	31	6	0	20	31	11	3	15	55	0	0	4

Statewide Advisory Committee recommendations

CAP 60 3 3BRE : ENGR 96 3 4BME : F/M 79 3 1A3B : INSP 1 0 D 2BN- : A/O 2 0 D 1AN- : MECH 11 3 2B3B

* MAKE HYDRANT FLOW TEST Involves the operation and reading of pilot gauges and standard pressure gauges, and interpreting gauge readings, recording gauge readings, and maintaining flow and test records. May also involve converting actual gauge readings to anticipated flow at other pressures through the use of conversion tables and formulas. This is usually performed by entire companies as a part of annual hydrant maintenance. Captains in large fire departments and inspectors may perform the job on an individual basis in order to determine water flow availability for particular risks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	0	0	0	14	1	0	3	2	0	0	0
BASIC-GENERAL	23	3	0	3	20	1	0	3	16	0	0	0
IN-DEPTH	15	4	0	5	6	1	1	3	12	5	5	0

Statewide Advisory Committee recommendations

CAP 56 3 3BRE : ENGR 27 3 3BME : F/M 33 3 1A3B : INSP 20 3 3BME : A/O 1 0 D 1AN- : MECH 9 3 D 1A2B

TABLE 4. DRIVING

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
UTILIZATION OF MOTOR VEHICLE CODE	67	71	56	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	61	72	50	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	84	92	89	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	64	66	46	H	H	H	3	3	3	3	3	5	4	3	3	1	1	1
INSPECTOR	58	84	87	H	H	H	3	3	3	3	2	2	3	3	3	1	1	1
ALARM OPERATOR	17	12	4	H	H	H	3	3	3	3	3	4	4	3	2	1	1	1
MECHANIC	77	74	44	H	H	H	3	1	3	2	1	3	3	3	3	1	1	1
UTILIZATION OF DEPARTMENTAL DRIVING RULES	72	69	63	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
CAPTAIN	71	63	69	H	H	H	3	3	3	3	3	2	3	3	4	1	1	1
ENGINEER	92	93	88	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
FIREMAN	66	66	50	H	H	H	3	3	3	5	5	2	3	3	4	1	1	1
INSPECTOR	62	84	86	H	H	H	3	3	3	2	2	2	3	3	3	1	1	1
ALARM OPERATOR	23	11	4	H	H	H	3	3	3	3	3	3	3	3	2	1	1	1
MECHANIC	77	74	87	H	H	H	3	3	3	5	2	3	3	3	2	1	1	1
UTILIZE DEFENSIVE DRIVING TECHNIQUES	69	63	56	H	H	H	3	3	3	5	3	3	4	3	4	1	1	1
CAPTAIN	59	50	37	H	H	H	3	3	3	5	3	5	3	4	4	1	1	1
ENGINEER	89	93	90	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	67	60	49	H	H	H	3	3	3	5	5	5	4	4	3	1	1	1
INSPECTOR	60	80	90	H	H	H	3	3	3	3	2	2	2	3	3	1	1	1
ALARM OPERATOR	25	10	4	H	H	H	3	3	3	3	2	4	3	3	2	1	1	1
MECHANIC	82	63	91	H	H	H	3	3	3	5	3	3	3	3	2	1	1	1

* UTILIZATION OF MOTOR VEHICLE CODE The Motor Vehicle Code sets specific laws for the operation of emergency vehicles. Therefore, the driver has to know and understand that part of the code. Captains are responsible for training and supervising their men in this area. Engineers and firemen drive apparatus. Inspectors and mechanics drive miscellaneous department vehicles.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	2	0	0	12	3	0	0	4	2	0	0
BASIC-GENERAL	27	6	0	6	34	7	1	10	26	0	0	2
IN-DEPTH	27	2	0	6	18	6	2	6	24	0	0	1

Statewide Advisory Committee recommendations

CAP 54 3 3DME : ENGR 89 3 3DME : F/M 51 3 2D3D : INSP 83 3 3DME : A/O 7 3 2D3D : MECH 52 3 2DME

* UTILIZATION OF DEPARTMENTAL DRIVING RULES Due to traffic problems, many departments have set up driving rules as to speed and approach at intersections when responding to alarm. These need to be understood by the driver. Engineers and firemen drive apparatus. Inspectors and mechanics drive miscellaneous department vehicles. The captains are responsible for the training and supervision of their men in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	10	0	0	0	6	0	0	0
BASIC-GENERAL	27	2	0	1	33	1	0	3	19	0	0	0
IN-DEPTH	34	3	0	5	24	2	0	3	36	0	0	1

Statewide Advisory Committee recommendations

CAP 68 3 3BRE : ENGR 89 3 4BRE : F/M 54 3 2B3B : INSP 83 3 3BME : A/O 7 3 2B3B : MECH 84 3 2B3B

* UTILIZE DEFENSIVE DRIVING TECHNIQUES With the heavy equipment involved in fire apparatus, defensive driving becomes paramount. This means keeping apparatus under control at all times and observing conditions well ahead in the road. The captains are responsible for the training and supervision of their men in this area. Engineers and firemen drive apparatus. Inspectors and mechanics drive miscellaneous vehicles.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	7	1	0	1	4	0	0	0
BASIC-GENERAL	23	2	0	4	25	3	0	5	20	1	0	0
IN-DEPTH	38	5	0	4	28	4	1	3	31	0	0	2

Statewide Advisory Committee recommendations

CAP 42 3 3DME : ENGR 90 3 4DME : F/M 53 3 2D3D : INSP 85 3 3DME : A/O 7 3 2D3D : MECH 86 3 3D3D

TABLE 4. DRIVING CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DRIVE APPARATUS	63	48	36	H	H	H	3	3	3	5	5	3	4	4	3	1	1	1
CAPTAIN	44	13	10	H	H	H	3	3	3	2	3	5	4	4	3	1	1	1
ENGINEER	96	86	89	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	60	49	27	H	H	H	3	3	3	5	5	5	4	4	3	1	1	1
INSPECTOR	27	28	50	H	H	H	3	3	3	2	3	2	3	3	3	1	1	1
ALARM OPERATOR	8	10	0	H	H	L	3	3	0	5	2	0	4	3	0	1	1	0
MECHANIC	91	68	72	H	H	H	3	3	3	5	3	3	4	4	4	1	1	1
OPERATE TILLER	3	9	5	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	0	4	0	L	H	H	0	3	3	0	3	5	0	3	4	0	1	14
ENGINEER	8	4	15	H	H	H	3	3	3	5	5	4	4	4	4	1	1	1
FIREMAN	2	15	3	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	5	11	15	M	H	M	3	3	3	4	5	3	4	4	4	1	1	1
SPOTTING OF APPARATLS	59	45	39	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	44	17	30	H	H	H	3	3	3	3	5	5	4	4	4	1	1	1
ENGINEER	94	86	87	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	55	46	27	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	6	9	20	H	H	H	3	3	3	4	5	2	3	4	4	1	1	1
ALARM OPERATOR	6	0	0	H	L	L	3	0	0	5	0	0	4	0	0	14	0	0
MECHANIC	55	5	15	H	H	H	3	3	3	5	4	3	4	4	4	1	1	1

* DRIVE APPARATUS Good driving techniques are required to handle fire apparatus. Operator must be able to shift up or down with ease. Proper steering is essential. Driver must know the feel of the braking system as well as acceleration. Captains are responsible for training their men to drive apparatus. Engineers drive and operate apparatus. Firemen may drive apparatus on an assignment basis. Inspectors usually drive apparatus only when assigned to reserve apparatus during greater alarm fires. Mechanics usually road-test apparatus.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	1	5	0	0	0	5	0	0	0
BASIC-GENERAL	16	1	0	1	15	2	0	6	12	1	0	0
IN-DEPTH	39	8	0	7	28	5	1	8	18	0	0	2

Statewide Advisory Committee recommendations

CAP 15 3 3BRE : ENGR 90 3 4BRE : F/M 33 3 2B3B : INSP 42 3 3BRE : A/O 2 3 1A2B : MECH 74 3 3BRE

* OPERATE TILLER Operator must have overall knowledge of the whole problem in order to exercise sound judgment. He must be thoroughly competent in handling driving assignment for placement of rear end of apparatus at fire scene as well as on straight-away. He should also understand the signaling system between tillerman and driver. Apparatus equipped with tillers is in limited use. Less than ten percent of the personnel in all ranks operate tillers.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	0	0	0	0	3	0	0	0	2	0	0	0
IN-DEPTH	3	0	0	0	6	1	1	0	3	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 3BN- : ENGR 13 3 2B3B : F/M 6 3 2B3B : INSP 0 0 D 2BN- : A/O 0 0 D 1AN- : MECH 13 3 2BME

* SPOTTING OF APPARATUS The driver must exercise good judgment in locating apparatus at a hydrant so that the suction hose can reach it with minimum effort and extra movement, and in placement of apparatus at a static water supply. Captains are responsible for training their men in the performance of this job. It is primarily the responsibility of engineers, but may be performed by firemen on an assignment basis. Inspectors and mechanics usually are involved during greater alarm fires.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	1	0	0	0	2	0	0	1
BASIC-GENERAL	15	2	0	4	15	2	0	2	8	0	0	1
IN-DEPTH	39	8	0	16	29	3	1	7	29	0	0	2

Statewide Advisory Committee recommendations

CAP 30 3 3BRE : ENGR 88 3 3BME : F/M 33 3 2D3B : INSP 17 3 D 2BN- : A/O 1 0 1AN- : MECH 19 3 3DRE

TABLE 4. DRIVING CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
PROTECTION OF EQUIPMENT	61	64	50	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	57	57	53	H H H	3 3 3	3 3 1	4 3 3	1	1	1
ENGINEER	92	84	90	H H H	3 3 3	3 3 3	4 3 3	1	1	1
FIREMAN	54	67	36	H H H	3 3 3	3 3 4	3 3 3	1	1	1
INSPECTOR	25	34	19	H H H	3 3 2	5 3 2	3 3 3	1	1	1
ALARM OPERATOR	10	0	4	H L H	3 0 3	4 0 3	3 0 3	1	0	1
MECHANIC	68	26	16	H H H	3 3 3	3 3 3	3 3 4	1	1	1
USE OF LIGHTS, SIRENS	67	58	46	H H H	3 3 3	5 5 4	3 3 3	1	1	1
CAPTAIN	79	74	76	H H H	3 3 3	4 4 4	3 3 3	1	1	1
ENGINEER	93	90	88	H H H	3 3 3	5 5 5	3 3 3	1	1	1
FIREMAN	57	46	19	H H H	3 3 3	5 5 4	3 4 3	1	1	1
INSPECTOR	54	44	49	H H H	3 3 3	5 4 4	3 3 2	1	1	1
ALARM OPERATOR	6	0	0	H L L	3 0 0	5 0 0	4 0 0	12	0	0
MECHANIC	55	21	45	H H M	3 3 3	5 4 4	3 4 3	1	1	1
OPERATE RADIO EQUIPMENT	80	74	61	H H H	3 3 3	5 5 5	3 3 3	1	1	1
CAPTAIN	90	89	87	H H H	3 3 3	5 5 5	3 3 3	1	1	1
ENGINEER	93	90	91	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	76	67	39	H H H	3 3 3	5 5 2	3 4 3	1	1	1
INSPECTOR	65	80	73	H H H	3 3 3	2 2 2	3 3 3	1	1	1
ALARM OPERATOR	31	18	17	H H H	3 3 3	5 5 5	4 3 3	1	1	1
MECHANIC	86	42	59	H H H	3 3 3	2 2 2	3 2 3	1	1	1

• PROTECTION OF EQUIPMENT The operator must place equipment at the scene of a fire in such a position as not to be unduly exposed to radiated heat, flying brands, or falling objects. He must be alert at all time to protect equipment from theft or damage. Civil disorders tend to compound this problem. Captains are responsible for training their men in the performance of this job. It is primarily the responsibility of engineers, but may be performed by firemen on an assignment basis. Inspectors and mechanics usually are involved during greater alarm fires.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	0	1	11	0	0	1	7	0	0	0
BASIC-GENERAL	28	4	0	7	36	7	0	10	19	0	0	3
IN-DEPTH	27	9	0	11	16	6	1	8	23	0	0	2

Statewide Advisory Committee recommendations
CAP 94 3 3BNE : ENGR 90 3 3BNE : F/M 42 3 2A3B : INSP 24 3 3BNE : A/O 4 3 1A2B : MECH 24 3 3BAB

• USE OF LIGHTS, SIRENS Drivers of emergency equipment need to understand the laws and departmental rules pertaining to the use of red lights and sirens when responding to an emergency, as well as the requirements when returning from the emergency. They also must understand the use of lights and sirens when answering calls that are not emergencies. This is primarily the responsibility of engineers, under the direction of the captains. The high percentage of mechanics who perform this job in small departments probably reflects a dual responsibility. Mechanics in large departments drive gasoline and service vehicles to large emergencies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	11	0	0	0	9	0	0	0
BASIC-GENERAL	33	5	0	5	24	3	0	3	24	0	0	1
IN-DEPTH	26	6	0	3	21	6	1	6	13	0	0	1

Statewide Advisory Committee recommendations
CAP 76 3 3BNE : ENGR 89 3 3BNE : F/M 25 3 1A3B : INSP 49 3 3BNE : A/O 1 0 1AB- : MECH 43 3 2BNE

• OPERATE RADIO EQUIPMENT Involves operating multi-channel mobile radio equipment, using code signals to minimize message traffic and time; interpreting and applying federal laws and departmental rules regulating radio use; the ability to speak clearly and distinctly, and the capacity to hear radio transmissions under adverse conditions. Radio equipment is utilized heavily by all fire service personnel.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	0	0	0	19	0	0	0	9	0	0	1
BASIC-GENERAL	38	1	0	2	29	0	0	2	26	0	0	1
IN-DEPTH	29	1	0	4	26	3	1	2	22	1	0	0

Statewide Advisory Committee recommendations
CAP 88 3 3BNE : ENGR 91 3 3BNE : F/M 47 3 1A3B : INSP 73 3 3BNE : A/O 19 3 2BAB : MECH 61 3 2BNE

TABLE 5. PUMPS

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAKE SUCTION CONNECTION	56	46	54	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	17	24	1	M	M	M	3	3	4	5	3	5	4	3	4	1	1	14
ENGINEER	95	87	83	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	58	45	69	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	5	0	M	L	L	3	3	0	5	3	0	3	4	0	1	14	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	5	0	0	4	0	0	14	0	0
MECHANIC	59	26	34	M	L	M	3	3	3	5	2	3	4	3	3	1	1	1
MAKE DISCHARGE CONNECTION	62	47	37	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	25	20	3	M	M	M	3	3	4	5	3	5	4	4	4	1	1	1
ENGINEER	98	90	81	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	67	48	37	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	5	0	M	L	L	3	2	0	4	3	0	3	4	0	1	14	0
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	5	0	0	4	0	0	14	0	0
MECHANIC	59	26	38	M	L	M	3	3	3	5	2	3	4	3	3	1	1	1
OPERATE BOOSTER PUMPS	54	37	31	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	23	19	7	M	M	M	3	3	3	5	3	5	4	4	4	1	1	14
ENGINEER	87	84	77	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	57	31	25	M	M	M	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	5	0	M	L	L	3	2	0	4	2	0	3	3	0	1	1	0
ALARM OPERATOR	8	0	0	M	L	L	3	0	0	4	0	0	3	0	0	1	0	0
MECHANIC	64	32	40	M	M	M	3	3	3	5	3	3	4	3	4	1	1	1

* MAKE SUCTION CONNECTION Connecting suction side of pumps to water supply by the use of various sizes of hose and adaptors. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the fire site due to dual responsibilities. Mechanics are usually involved in the job as a part of their responsibility to conduct or supervise pump tests.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	3	0	0	0	5	0	0	0
BASIC-GENERAL	17	1	0	7	17	3	0	9	4	0	0	2
IN-DEPTH	35	5	0	16	26	5	0	11	45	1	0	4

Statewide Advisory Committee recommendations

CAP 6 3 3DRE : ENGR 85 3 4DRE : F/M 64 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 36 3 2DME

* MAKE DISCHARGE CONNECTION Connecting various sizes of hose, fittings, adaptors and nozzles to the discharge side of pumps for movement of water or other extinguishing agent. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the fire site due to dual responsibilities. Mechanics are usually involved in the job as a part of their responsibility to conduct or supervise pump tests.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	4	1	0	2	3	0	0	0
BASIC-GENERAL	18	1	0	7	17	1	0	4	8	0	0	1
IN-DEPTH	36	6	0	17	27	4	0	13	27	2	0	3

Statewide Advisory Committee recommendations

CAP 8 3 3DRE : ENGR 84 3 4DRE : F/M 42 3 1A3D : INSP 1 2 D 2DN- : A/O 1 0 D 1AN- : MECH 39 3 2DME

* OPERATE BOOSTER PUMPS Pumping water or other extinguishing agent by a small auxiliary pump designed for limited capacity at high pressures. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the site of the fire due to dual responsibilities. Mechanics are usually involved in the job as a part of their responsibility for conducting or supervising pump tests.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	0	1	0	0	0	2	0	0	0
BASIC-GENERAL	15	1	0	6	10	2	0	6	4	0	0	2
IN-DEPTH	36	8	0	19	26	7	1	12	24	1	0	3

Statewide Advisory Committee recommendations

CAP 11 3 3DRE : ENGR 78 3 4DRE : F/M 30 3 1A3D : INSP 1 2 D 2DN- : A/O 1 0 D 1AN- : MECH 42 3 2D3D

TABLE 5. PUMPS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
READ AND INTERPRET GAUGES	60	43	45	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	32	28	62	H	M	H	3	3	3	5	3	5	4	4	4	1	1	1
ENGINEER	93	89	87	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	63	37	25	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	8	2	H	M	H	3	3	2	5	3	2	3	3	2	1	14	14
ALARM OPERATOR	8	0	0	H	L	L	3	0	0	5	0	0	4	0	0	1	0	0
MECHANIC	77	47	45	H	H	H	3	3	3	5	3	3	4	3	4	1	1	1
OPERATE PUMP FROM HYDRANT	56	38	29	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	23	13	3	M	M	H	3	3	4	5	3	5	4	4	4	1	14	124
ENGINEER	95	90	80	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	56	32	23	H	H	M	3	3	3	5	5	3	4	4	4	1	1	1
INSPECTOR	2	5	0	H	H	L	3	4	0	5	3	0	3	4	0	1	14	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	5	0	0	4	0	0	12	0	0
MECHANIC	64	16	32	H	H	M	3	3	4	5	4	3	4	4	4	1	1	1
OPERATE PUMP FROM DRAFT	53	41	30	L	L	L	3	3	3	3	3	5	4	4	4	1	1	1
CAPTAIN	20	20	1	H	L	L	3	3	4	3	3	3	4	4	4	1	1	14
ENGINEER	95	86	84	L	L	L	3	3	3	3	3	5	4	4	4	1	1	1
FIREMAN	50	37	22	L	L	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	5	0	H	L	L	3	4	0	2	3	0	3	4	0	1	14	0
ALARM OPERATOR	8	0	0	L	L	L	3	0	0	3	0	0	3	0	0	1	0	0
MECHANIC	59	37	40	H	L	L	3	3	3	5	3	3	4	3	4	1	1	1

* READ AND INTERPRET GAUGES Understanding the functions and applying the readings of the various gauges used on pumps in the pumping of water or other extinguishing agents. This is primarily the responsibility of engineers. Firemen and mechanics in small departments may perform this job at the fire site due to dual responsibilities. Mechanics are usually involved in the job as a part of their responsibility to conduct or supervise pump tests.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	1	3	0	0	1	4	0	0	2
BASIC-GENERAL	21	5	0	9	12	3	0	5	4	0	0	2
IN-DEPTH	36	10	0	20	28	13	2	16	37	11	5	4

Statewide Advisory Committee recommendations

CAP 53 3 3DRE : ENGR 88 3 4DRE : F/M 32 3 1A3D : INST 3 3 3DN- : A/O 1 0 D 1AN- : MECH 49 3 2D3D

* OPERATE PUMP FROM HYDRANT Involves the knowledge of hydrant location; the operation of various types of hydrants and their capacity. Correctly making hose connections is essential. It also involves pump operation and the functions of relief valves and governors and transfer valves. Requires a working knowledge of those principles of hydraulics that apply to pump operation, and an understanding of the relations and application of these jobs to other jobs. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the fire site due to dual responsibilities. Mechanics are usually involved in operation and maintenance of pumps as a part of their responsibility to conduct or supervise pump tests.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	2	0	0	0	1	0	0	0
BASIC-GENERAL	12	1	0	5	6	3	0	4	3	0	0	1
IN-DEPTH	39	15	0	23	28	12	2	15	25	2	0	3

Statewide Advisory Committee recommendations

CAP 7 3 3DRE : ENGR 83 3 4DRE : F/M 29 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 34 3 2D3D

* OPERATE PUMP FROM DRAFT Requires a knowledge of the operation of pumps and their methods of priming. The pump operator must know how to read various types of gauges and know the meaning of readings. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the site of the fire due to dual responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	14	2	0	7	10	6	3	6	3	0	0	1
IN-DEPTH	35	16	0	22	29	12	1	13	26	3	0	3

Statewide Advisory Committee recommendations

CAP 6 3 3DRE : ENGR 86 3 3DME : F/M 28 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 42 3 2D3D

TABLE 5. PUMPS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE PUMPS IN RELAY	43	37	21	L	L	L	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	20	17	1	L	M	L	3	3	4	5	3	5	4	4	4	1	14	14
ENGINEER	82	82	80	L	L	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	39	33	8	L	L	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	2	0	0	L	L	L	3	0	0	5	0	0	3	0	0	1	0	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	5	0	0	3	0	0	124	0	0
MECHANIC	41	11	6	H	L	H	3	3	4	5	4	3	4	4	4	1	1	124
MAINTAIN PUMPS	45	29	21	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	20	15	19	H	M	H	3	3	4	3	3	5	3	3	4	1	14	1
ENGINEER	87	59	73	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
FIREMAN	39	25	2	H	H	H	3	3	3	3	3	3	4	4	3	1	1	14
INSPECTOR	2	0	0	H	L	L	3	0	0	2	0	0	3	0	0	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	91	95	62	H	H	H	5	3	3	3	3	3	4	4	4	1	1	1
TROUBLESHOOT PUMP OPERATION	43	37	30	H	H	H	4	4	4	3	5	3	4	4	4	1	1	1
CAPTAIN	37	30	35	H	H	H	4	3	4	5	3	5	4	4	4	1	1	1
ENGINEER	80	71	78	H	H	H	4	4	4	3	5	3	4	4	4	1	1	1
FIREMAN	32	31	10	H	H	H	4	4	3	3	3	5	4	4	4	1	1	1
INSPECTOR	2	11	0	H	H	L	3	4	0	2	5	0	3	4	0	1	1	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	4	0	0	4	0	0	12	0	0
MECHANIC	91	95	59	H	M	H	4	4	5	3	5	3	4	4	4	1	1	1

* OPERATE PUMPS IN RELAY Involves the use of formulas for determining position of pump in relay line due to the effects of friction loss in hose. All of the items required in pump operation are required in this job. This is primarily the responsibility of engineers. Mechanics in small departments may perform this job at the site of the fire due to dual responsibilities. Mechanics are usually involved in the job as a part of their responsibility to conduct or supervise pump tests. Mechanics in large departments seldom perform the job because it is not related to testing pumps.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	3	1	0	1	0	0	0	0
BASIC-GENERAL	11	2	0	8	11	5	3	8	4	0	0	1
IN-DEPTH	29	15	0	17	22	12	1	11	16	2	0	2

Statewide Advisory Committee recommendations

CAP 6 3 3DRE : ENGR 81 3 3DME : F/M 15 3 1A3D : INSP 0 0 D 2DN- : A/O 1 0 D 1AN- : MECH 11 3 2DME

* MAINTAIN PUMPS A basic knowledge of pump construction and the related components is essential. Inspections of pumps and related parts is a responsibility of the operator. Minor trouble-shooting and adjustments are required as well as cleaning, lubricating and testing pumps and pump components. This is primarily the responsibility of the engineers and the mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	2	0	3	2	1	0	1	0	0	0	0
BASIC-GENERAL	16	4	0	7	12	3	0	8	5	1	0	1
IN-DEPTH	20	8	0	13	14	7	1	7	15	2	0	1

Statewide Advisory Committee recommendations

CAP 19 3 3DRE : ENGR 73 3 3DME : F/M 10 3 1A3D : INSP 0 0 D 2DN- : A/O 0 0 D 1AN- : MECH 70 3 2D3D

* TROUBLESHOOT PUMP OPERATION There are times when minor repairs or adjustments must be made by the operator. He must know how to locate trouble intelligently in maintaining and operating the pump. He must know how to make the necessary repairs. This is primarily the responsibility of the engineers and the mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	1	0	0	0	0	0	0	0
BASIC-GENERAL	14	6	0	4	14	2	0	6	6	0	0	2
IN-DEPTH	22	9	0	16	20	9	1	11	23	4	0	2

Statewide Advisory Committee recommendations

CAP 35 4 3DRE : ENGR 78 4 3D4D : F/M 16 4 1A3D : INSP 2 3 D 2DN- : A/O 1 0 D 1AN- : MECH 68 4 2D3D

TABLE 6. APPARATUS

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
WASH, CLEAN, AND POLISH APPARATUS	66	65	41	H	H	H	3	3	3	3	2	2	3	3	3	1	1	1
CAPTAIN	28	17	9	H	H	H	3	3	3	3	3	2	3	3	4	1	1	1
ENGINEER	92	90	88	H	H	H	3	3	3	3	2	2	3	3	3	1	1	1
FIREMAN	77	82	39	H	H	H	3	3	3	3	2	2	3	2	3	1	1	1
INSPECTOR	2	0	11	H	L	H	3	0	3	2	0	3	3	0	3	1	0	1
ALARM OPERATOR	8	10	0	H	H	L	3	3	0	2	3	0	3	2	0	1	1	0
MECHANIC	32	21	9	H	H	H	3	3	3	3	2	2	3	1	3	1	1	1
INSPECT AND MAINTAIN TIRES	54	53	48	H	H	H	3	3	3	3	3	2	3	3	3	1	1	1
CAPTAIN	17	25	55	H	H	H	1	3	3	3	3	3	2	3	3	1	1	1
ENGINEER	92	92	89	H	H	H	3	3	3	3	3	2	3	3	3	1	1	1
FIREMAN	56	55	32	H	H	H	3	3	3	3	2	2	3	3	3	1	1	1
INSPECTOR	6	6	6	H	H	H	3	3	0	2	2	2	3	2	1	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	77	74	37	H	M	H	3	3	3	2	2	3	3	3	3	1	1	1
INSPECT AND MAINTAIN DRIVE SYSTEMS	38	36	30	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	9	14	44	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	86	67	75	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	28	37	9	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	0	0	6	L	L	H	0	0	3	0	0	2	0	0	1	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	86	100	53	H	M	H	5	3	3	3	3	3	4	3	3	1	1	1

* WASH, CLEAN, AND POLISH APPARATUS The operator is usually responsible for keeping his piece of apparatus in a clean condition. Therefore, it is necessary that there be an understanding of the approved methods of cleaning as set forth by the department. Engineers and firemen carry on these activities at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	18	1	0	1	33	0	0	4	14	0	0	0
BASIC-GENERAL	28	1	0	1	23	0	0	2	18	1	0	0
IN-DEPTH	10	0	0	1	3	1	0	1	3	0	0	0

Statewide Advisory Committee recommendations

CAP 12 3 3BN- : ENGR 89 3 3BRE : F/M 49 3 1A3B : INSP 8 3 2BN- : A/O 2 3 D 1A2B : MECH 13 3 D 1AN-

* INSPECT AND MAINTAIN TIRES The person assigned as operator is responsible for the care of the tires on his apparatus. He must know the proper inflation pressure and understand the effects of insufficient pressure upon tires as well as the effects of cuts and bruises. He should be able to read a tire pressure gauge. This responsibility is assigned principally to engineers and mechanics, who perform at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	18	0	0	1	20	1	0	3	18	0	0	0
BASIC-GENERAL	29	2	0	5	26	2	0	4	22	0	0	3
IN-DEPTH	2	1	0	1	3	1	0	1	2	0	0	0

Statewide Advisory Committee recommendations

CAP 48 3 3BRE : ENGR 90 3 3BRE : F/M 38 3 1A2B : INSP 6 3 2BME : A/O 0 0 D 1AN- : MECH 47 3 1AN-

* INSPECT AND MAINTAIN DRIVE SYSTEMS The person charged with this responsibility must have a basic automotive mechanical knowledge. Lubrication of moving parts is necessary and from time to time minor adjustments are needed. There is need for an understanding of the effects of improper lubrication or improper adjustment upon efficient operation. Captains usually inspect and supervise while actual maintenance is usually performed by engineers and mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	0	10	4	2	4	5	0	0	0
BASIC-GENERAL	24	4	0	3	18	0	0	3	19	7	1	2
IN-DEPTH	2	1	0	1	6	2	0	4	4	0	0	0

Statewide Advisory Committee recommendations

CAP 36 3 3DN- : ENGR 75 3 3DME : F/M 15 3 1A2D : INSP 4 0 2DN- : A/O 0 0 D 1AN- : MECH 63 3 3D4D

TABLE 6. APPARATUS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
INSPECT AND MAINTAIN COOLING SYSTEMS	47	35	28	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	12	13	20	H H H	3 3 3	3 3 5	3 4 4	1	1	1
ENGINEER	93	78	86	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	41	30	9	H H H	3 3 3	3 3 2	3 3 3	1	1	1
INSPECTOR	4	6	6	H H H	3 3 3	2 2 2	1 2 1	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	91	100	61	H M H	4 3 3	3 3 3	4 3 3	1	1	1
INSPECT AND MAINTAIN FUEL SYSTEMS	38	34	24	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	9	13	20	H H H	3 3 3	3 3 3	3 4 3	1	1	1
ENGINEER	86	75	71	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	29	30	9	H H H	3 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	0	6	0	L H L	0 3 0	0 2 0	0 2 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	91	100	61	H M H	5 4 3	3 3 3	3 4 3	1	1	1
INSPECT AND MAINTAIN LUBRICATION SYSTEMS	37	33	30	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	10	15	44	H H H	3 3 3	3 3 3	3 4 3	1	1	1
ENGINEER	81	76	75	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	28	27	9	H H H	3 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	4	6	0	H H L	3 3 0	2 2 0	0 2 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	91	100	54	H L H	5 3 3	3 3 3	3 3 3	1	1	1

* INSPECT AND MAINTAIN COOLING SYSTEMS This job requires a knowledge of the cooling system, whether direct or indirect, and recognition of the possible results of neglect, leaks, or dirty water as well as insufficient supply or impeded circulation. The person responsible should have a knowledge of how to back-flush the cooling system. Captains may inspect and supervise; actual maintenance is performed by engineers and mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	2	0	0	5	1	0	0	7	0	0	0
BASIC-GENERAL	30	4	0	5	24	2	0	5	14	2	1	2
IN-DEPTH	6	1	0	2	6	3	0	3	4	0	0	0

Statewide Advisory Committee recommendations

CAP 18 3 3DRE : ENGR 86 3 3DME : F/M 15 3 1A2D : INSP 6 3 D 1AN- : A/O 0 0 D 1AN- : MECH 70 3 3D4D

* INSPECT AND MAINTAIN FUEL SYSTEMS This job requires an understanding of the importance of maintaining a full supply of fuel. The person responsible must know departmental policy for replenishment of fuel and how to keep the record of fuel, and how to inspect fuel systems and make minor adjustment and repairs. Captains may inspect and supervise while actual maintenance is performed by the engineers and the mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	1	9	0	0	1	6	0	0	0
BASIC-GENERAL	27	4	0	4	17	1	0	1	14	1	1	2
IN-DEPTH	0	0	0	0	8	3	0	5	3	0	0	0

Statewide Advisory Committee recommendations

CAP 18 3 3DRE : ENGR 73 3 3DME : F/M 15 3 1A2D : INSP 1 0 D 1AN- : A/O 0 0 D 1AN- : MECH 70 3 3D4D

* INSPECT AND MAINTAIN LUBRICATION SYSTEMS Some mechanical aptitude is required for this job. Those responsible must know how to check the rear end housing for lubricant, as well as the transmission. Wheel bearings will need packing from time to time, and attention must be given to lubrication. There must be a knowledge of the type of lubricant to be used for each point. The oil level must be checked frequently. Oil and oil filter must be changed periodically. Captains usually inspect and supervise, while the actual maintenance work is performed by the engineers and the mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	0	1	11	2	0	0	0	0	0	0
BASIC-GENERAL	29	4	0	5	14	2	0	4	25	7	1	2
IN-DEPTH	1	0	0	0	8	3	0	5	3	0	0	0

Statewide Advisory Committee recommendations

CAP 35 3 3DRE : ENGR 76 3 3DME : F/M 14 3 1A2D : INSP 1 3 D 1AN- : A/O 0 0 D 1AN- : MECH 65 3 2D3D

TABLE 6. APPARATUS CONTINUED

	PEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INSPECT AND MAINTAIN MISCELLANEOUS OPERATING ECUIPMENT	61	50	35	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	27	24	55	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	91	92	86	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	67	49	9	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
INSPECTOR	6	4	0	H	H	L	3	2	0	2	2	0	3	2	0	1	1	0
ALARM OPERATOR	0	10	4	L	H	H	0	3	3	0	3	3	0	2	3	0	1	1
MECHANIC	73	100	58	H	H	H	5	3	3	3	3	3	4	3	4	1	1	1
INSPECT, MAINTAIN, AND RECHARGE STORAGE BATTERIES	52	40	31	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	18	14	20	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	90	85	81	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	51	37	17	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	6	6	6	H	H	H	3	3	1	2	2	3	3	2	2	1	1	1
ALARM OPERATOR	6	0	4	H	L	H	3	0	3	3	0	3	3	0	2	1	0	1
MECHANIC	86	84	51	H	H	H	4	3	3	3	2	3	3	3	3	1	1	1
INSPECT AND MAINTAIN WARNING SYSTEMS	43	35	25	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	15	17	20	H	H	H	4	3	3	3	3	5	3	3	3	1	1	1
ENGINEER	89	81	70	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	36	28	11	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	4	6	0	H	H	L	3	3	0	2	2	0	3	2	0	1	1	0
ALARM OPERATOR	0	0	4	L	L	H	0	0	3	0	0	3	0	0	3	0	0	1
MECHANIC	86	68	59	H	H	H	4	3	5	3	3	3	3	3	4	1	1	1

• INSPECT AND MAINTAIN MISCELLANEOUS OPERATING EQUIPMENT Such pieces of miscellaneous operating equipment as winches, apparatus stabilizers or outriggers, and portable pumps need periodic attention. This requires knowledge of their function and operation by those assigned to the job. Captains usually inspect and supervise while actual maintenance is performed by the engineers and the mechanics.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	14	2	0	5	8	1	0	0	1	0	0	0
BASIC-GENERAL	34	2	0	6	25	5	0	7	26	1	1	1
IN-DEPTH	12	5	0	8	17	6	2	7	6	0	0	1

Statewide Advisory Committee recommendations

CAP 47 3 3DR- : ENGR 65 3 3DRE : F/M 22 3 1A3D : INEP 1 2 D 1AR- : A/O 4 3 1AED : MECH 66 3 2D3D

• INSPECT, MAINTAIN, AND EXCHANGE STORAGE BATTERIES This type of job requires testing of the specific gravity of the electrolyte in the battery cells. Checking the voltage is required, as well as a periodic breakdown test. Those concerned must be able to read and interpret hydrometer readings, voltage readings and breakdown load readings. The operation of battery chargers and the proper method of adding clean distilled water when needed should be understood. Safety rules regarding handling of electrolyte must be understood as well as how to neutralize the electrolyte with soda in the event of a spill. The captains usually inspect and supervise while actual maintenance is performed by the engineers and mechanics.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	1	9	1	0	0	1	0	0	0
BASIC-GENERAL	35	4	0	6	26	2	0	9	22	1	1	3
IN-DEPTH	2	0	0	1	4	3	0	2	5	0	0	1

Statewide Advisory Committee recommendations

CAP 19 3 3DR- : ENGR 63 3 3DRE : F/M 24 3 1A3D : INEP 6 3 D 1AR- : A/O 4 3 1AED : MECH 60 3 2DRE

• INSPECT AND MAINTAIN WARNING SIRENS Many motor driven sirens are in use today but the electronic siren is taking over a big portion of the field. For the motor driven type of siren, knowledge of motor construction, methods of cleaning a commutator, and how to change brushes is required. When inspecting an electronic siren, a voltage check should be made with the proper meter. The captains are usually responsible for inspection and supervision while the actual maintenance work is performed by the engineers and mechanics.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	2	0	0	11	0	0	0	1	0	0	0
BASIC-GENERAL	26	2	0	3	17	1	0	4	19	0	1	1
IN-DEPTH	6	0	0	1	6	3	0	5	3	0	0	0

Statewide Advisory Committee recommendations

CAP 19 3 3DR- : ENGR 74 3 3DRE : F/M 17 3 1A3D : INEP 1 3 D 1AR- : A/O 3 0 1AED : MECH 64 3 3DAD

TABLE 6. APPARATUS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
INSPECT AND MAINTAIN STARTING SYSTEMS	42	30	18	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	14	14	20	H H H	4 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	87	54	38	H H H	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	35	30	10	H H H	3 3 3	3 3 3	3 3 3	1 1 1
INSPECTOR	4	6	0	H H L	3 3 0	2 2 0	1 2 0	0 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	91	100	60	H H H	4 3 3	3 3 3	3 3 4	1 1 1
INSPECT AND MAINTAIN LIGHTING SYSTEMS	45	38	27	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	15	11	26	H H H	2 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	84	83	74	H H H	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	41	35	10	H H H	3 3 3	3 3 3	3 3 3	1 1 1
INSPECTOR	4	6	0	H H L	3 3 0	2 2 0	1 2 0	0 1 0
ALARM OPERATOR	0	0	4	L L H	0 0 3	0 0 3	0 0 3	0 0 1
MECHANIC	82	89	62	H H H	5 4 5	3 3 3	3 3 3	1 1 1
INSPECT AND MAINTAIN IGNITION SYSTEMS	41	29	24	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	7	8	20	H H H	3 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	81	50	69	H H H	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	37	32	9	H H H	3 3 3	3 3 3	3 3 3	1 1 1
INSPECTOR	4	6	0	H H L	3 3 0	2 2 0	1 2 0	0 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	91	100	60	H H H	4 4 3	3 3 3	3 1 4	1 1 1

* INSPECT AND MAINTAIN STARTING SYSTEMS This particular job requires some mechanical aptitude relating to electrically driven motors, and a basic knowledge of electricity. It requires knowledge of how and what to use for sanding and cleaning a commutator, and how to install and seat brushes for minimum spark. The captains may be responsible for inspection and supervision while the actual maintenance work is performed by the engineers and mechanics.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	0	10	1	0	2	0	0	0	0
BASIC-GENERAL	30	4	0	5	14	1	0	2	13	0	1	1
IN-DEPTH	4	0	0	4	6	3	0	5	3	0	0	0

Statewide Advisory Committee recommendations

CAP 19 3 3DN- : ENGR 49 3 3DRE : F/M 16 3 1A3D : INSP 1 3 D 1AN- : A/O 0 0 D 1AN- : MECH 69 3 3D4D

* INSPECT AND MAINTAIN LIGHTING SYSTEMS This involves keeping the wiring in good condition and having tight connections. The person responsible must have a working knowledge of fuses and types of light bulbs being used. Adjustment of headlights is often required after replacement of lamp. The captains may be responsible for inspection and supervision while the engineers and mechanics do the actual maintenance work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	11	2	0	1	5	0	0	0	1	0	0	0
BASIC-GENERAL	26	2	0	2	27	1	0	4	20	0	1	1
IN-DEPTH	6	0	0	2	6	3	0	5	3	0	0	0

Statewide Advisory Committee recommendations

CAP 23 3 3DN- : ENGR 77 3 3DRE : F/M 17 3 1A3D : INSP 1 3 D 1AN- : A/O 3 0 D 1A2D : MECH 68 5 3D4D

* INSPECT AND MAINTAIN IGNITION SYSTEMS This requires cleaning and adjusting spark plugs from time to time. Ignition wires also need replacement from time to time. Distributor caps need inspection for cracks or arc-over and may need to be replaced. Distributors are checked for burned points. The captains may inspect and supervise while the engineers and mechanics do the actual maintenance work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	8	0	0	0	1	0	0	0
BASIC-GENERAL	29	5	0	4	14	2	0	4	18	1	1	1
IN-DEPTH	3	0	0	0	7	4	0	4	2	0	0	0

Statewide Advisory Committee recommendations

CAP 17 3 3DN- : ENGR 68 3 3DRE : F/M 16 3 1A3D : INSP 1 3 D 1AN- : A/O 0 0 D 1AN- : MECH 69 4 3D4D

TABLE 6. APPARATUS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INSPECT AND MAINTAIN BRAKING SYSTEMS	39	32	24	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	9	11	20	H	H	H	4	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	83	63	68	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	32	32	10	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	4	6	0	H	H	L	3	3	0	2	2	0	1	2	0	0	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	91	100	60	H	H	H	4	4	3	3	3	3	4	3	4	1	1	1
INSPECT AND MAINTAIN HYDRAULIC SYSTEMS	32	32	24	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	14	9	18	H	H	H	4	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	71	71	73	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	22	30	8	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	0	6	0	L	H	L	0	3	0	0	2	0	0	2	0	0	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	91	100	59	H	H	H	4	3	5	3	2	3	4	3	4	1	1	1
IDENTIFY APPARATUS MALFUNCTION	49	40	37	H	H	H	4	4	4	3	3	3	3	3	3	1	1	1
CAPTAIN	45	42	74	H	H	H	4	4	4	3	3	5	3	4	4	1	1	1
ENGINEER	94	74	81	H	H	H	4	4	4	3	3	3	3	3	3	1	1	1
FIREMAN	35	30	7	H	H	H	4	4	3	3	5	3	3	3	3	1	1	1
INSPECTOR	0	6	6	L	H	L	0	4	3	0	5	2	0	4	1	0	12	0
ALARM OPERATOR	0	10	4	L	H	H	0	3	3	0	5	3	0	4	3	0	1	1
MECHANIC	91	100	60	H	H	H	5	4	4	3	3	3	4	1	4	1	1	1

* INSPECT AND MAINTAIN BRAKING SYSTEMS This requires checking air or hydraulic brake systems for proper functioning. Where mechanical brakes are used, the brake cables or rods are checked. When brakes are operated by air the air reserve tank and lines as well as valves are checked for leaks. Road testing of apparatus for braking response is part of the overall test. The captains may inspect and supervise while the engineers and mechanics do the actual maintenance work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	3	0	0	9	1	0	0	0	0	0	0
BASIC-GENERAL	28	3	0	3	18	2	0	4	18	0	1	1
IN-DEPTH	4	0	0	1	5	2	0	3	3	0	0	0

Statewide Advisory Committee recommendations

CAP 17 3 3DRE : ENGR 69 3 3DRE : F/M 16 3 1A3D : INSP 1 3 D 1AN- : A/O 0 0 D 1AN- : MECH 69 4 3D4D

* INSPECT AND MAINTAIN HYDRAULIC SYSTEMS Under this heading the piping and tubing on brakes, aerial ladders, and elevated platforms are inspected for leaks, cuts, abrasions and loose connections. Master cylinders and fluids and fluid reservoirs, are checked for fluid level and filled as necessary. Hydraulic pumps are also checked for operation. The captains may inspect and supervise while the engineers and mechanics do the actual maintenance work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	0	8	1	0	0	1	0	0	0
BASIC-GENERAL	25	2	0	2	18	1	0	4	18	0	1	1
IN-DEPTH	2	0	0	1	6	3	0	4	2	0	0	0

Statewide Advisory Committee recommendations

CAP 16 3 3DN- : ENGR 73 3 3DRE : F/M 12 3 1A3D : INSP 1 0 D 1AN- : A/O 0 0 D 1AN- : MECH 69 4 3D4D

* IDENTIFY APPARATUS MALFUNCTION Requires the person to be able to recognize minor malfunctions as they are developing in the apparatus or related components. He should have a working knowledge of the system and the ability to trouble-shoot. The captains inspect and supervise while the engineers and mechanics do the actual maintenance work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	11	2	0	1	1	0	0	0
BASIC-GENERAL	36	7	0	7	16	3	0	3	22	5	1	1
IN-DEPTH	7	2	1	3	11	6	3	6	12	3	0	2

Statewide Advisory Committee recommendations

CAP 66 4 3DRE : ENGR 82 4 3DME : F/M 14 4 1A3D : INSP 5 3 D 2BME : A/O 4 3 1A2D : MECH 69 4 2D3D

TABLE 6. APPARATUS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
INSPECT AND MAINTAIN POWER STEERING	27	24	13	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	9	8	2	H H H	3 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	61	51	48	H H H	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	17	21	4	H H H	3 3 3	3 3 3	3 3 4	1 1 1
INSPECTOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	91	100	60	H M H	4 3 4	3 3 3	3 3 4	1 1 1

* INSPECT AND MAINTAIN POWER STEERING Requires cleaning, checking for leaks, and assuring smooth operation. The captains inspect and supervise while the engineers and mechanics do the actual maintenance work at high levels of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	0	6	0	0	0	1	0	0	0
BASIC-GENERAL	17	2	0	2	11	3	0	2	11	0	0	0
IN-DEPTH	1	0	0	1	5	3	0	4	1	0	0	0

Statewide Advisory Committee recommendations

CAP 4 3 3DN- : ENGR 50 3 3DME : F/M 8 3 1A3D : INSP 0 0 D 1AN- : A/O 0 0 D 1AN- : MECH 69 4 3D4D

TABLE 7. HANDLING FORCIBLE ENTRY AND MISCELLANEOUS TOOLS

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE CARRYING TOOLS	61	58	60	H	H	H	3	3	3	5	3	5	4	3	4	1	1	1
CAPTAIN	49	41	55	H	M	H	3	3	3	5	3	5	4	4	4	1	1	1
ENGINEER	46	45	61	M	H	H	3	3	3	5	3	2	4	4	4	1	1	1
FIREMAN	85	77	69	H	H	H	3	3	3	5	5	5	4	3	4	1	1	1
INSPECTOR	4	8	0	H	M	L	3	3	0	5	4	0	4	3	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	11	8	H	H	H	3	3	4	3	3	3	4	3	2	1	1	14
OPERATE DIGGING TOOLS	63	63	74	H	M	H	3	3	3	4	5	5	3	3	3	1	1	1
CAPTAIN	54	52	52	H	M	H	3	3	3	3	3	5	3	3	4	1	1	1
ENGINEER	43	48	81	M	H	H	3	3	3	3	4	5	3	4	3	1	1	1
FIREMAN	88	83	87	H	M	H	3	3	3	4	5	5	3	3	3	1	1	1
INSPECTOR	2	8	0	H	M	L	3	3	0	2	4	0	3	3	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	5	4	H	M	M	3	3	1	3	2	2	3	3	2	1	1	14
OPERATE STRIKING TOOLS	65	64	73	H	M	H	3	3	3	5	5	5	3	3	4	1	1	1
CAPTAIN	56	51	53	H	M	H	3	3	3	5	3	5	3	4	4	1	1	1
ENGINEER	49	51	64	M	H	H	3	3	3	4	2	3	3	4	3	1	1	1
FIREMAN	89	83	91	H	H	H	3	3	3	4	5	5	4	3	4	1	1	1
INSPECTOR	2	11	0	M	H	L	3	3	0	5	5	0	4	4	0	14	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	23	16	13	H	H	H	3	3	3	3	2	2	3	3	3	1	1	1

* OPERATE CARRYING TOOLS Many different types of carrying tools are manufactured and used within the fire service. Specific knowledge is required for the operation of each particular tool. Some are used for the removal of debris, others for handling other types of equipment. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	4	10	0	0	4	6	1	0	2
BASIC-GENERAL	21	4	0	3	23	4	0	10	19	0	0	2
IN-DEPTH	33	11	0	24	24	6	3	14	36	0	1	4

Statewide Advisory Committee recommendations

CAP 52 3 3BRE : ENGR 57 3 4BRE : F/M 73 3 1A3B : INSP 2 3 D 2BME : A/O 0 0 D 1AN- : MECH 10 3 1AN-

* OPERATE DIGGING TOOLS The fire service employs a variety of digging tools and other tools that can be used for digging if the need arises. To use these tools in a safe, efficient manner requires training and understanding. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	4	19	2	0	5	8	1	0	0
BASIC-GENERAL	29	3	0	7	24	2	0	9	23	0	0	4
IN-DEPTH	25	9	0	17	16	6	2	11	38	0	1	2

Statewide Advisory Committee recommendations

CAP 52 3 3BRE : ENGR 72 3 3BRE : F/M 87 3 1A3B : INSP 1 3 D 2BME : A/O 0 0 D 1AN- : MECH 6 3 1A2B

* OPERATE STRIKING TOOLS Striking tools differ in their weight and design. The type to be used depends upon the job at hand. If these tools are to be handled safely, training is essential. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters, or may utilize the job in the repair shop.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	14	0	0	4	6	1	0	1
BASIC-GENERAL	30	5	0	12	27	5	0	13	26	0	0	5
IN-DEPTH	29	6	0	18	22	6	3	12	37	1	1	3

Statewide Advisory Committee recommendations

CAP 53 3 3BRE : ENGR 60 3 4BRE : F/M 90 3 1A3B : INSP 2 3 D 2BME : A/O 0 0 D 1AN- : MECH 15 3 1AN-

TABLE 7. HANDLING FORCIBLE ENTRY AND MISCELLANEOUS TOOLS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE BATTERING TOOLS	56	63	67	H H H	3 3 3	5 5 5	3 4 3	1	1	1
CAPTAIN	52	51	52	M H H	3 3 3	5 3 5	3 4 4	1	1	1
ENGINEER	36	48	58	H H H	3 3 3	4 4 5	3 4 3	1	1	1
FIREMAN	79	83	84	H H H	3 3 3	4 5 5	4 3 4	1	1	1
INSPECTOR	0	13	0	L H L	0 3 0	0 5 0	0 4 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	5	0	H M L	3 3 0	4 2 0	3 3 0	1	1	0
OPERATE PRYING TOOLS	67	72	72	H H H	3 3 3	4 5 5	4 4 4	1	1	1
CAPTAIN	61	63	55	H M H	3 3 3	5 5 5	3 4 4	1	1	1
ENGINEER	55	56	63	H H H	3 3 3	4 4 4	4 4 3	1	1	1
FIREMAN	89	92	90	H H H	3 3 3	4 5 5	4 4 4	1	1	1
INSPECTOR	4	11	0	H M L	3 3 0	2 4 0	3 4 0	1	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	23	11	4	H H H	3 3 3	3 2 2	4 3 1	1	1	0
OPERATE LIGHTING TOOLS	68	70	60	H H H	3 3 3	4 5 5	3 3 4	1	1	1
CAPTAIN	61	55	55	H M H	3 3 3	5 4 5	4 4 4	1	1	1
ENGINEER	56	68	63	H H H	3 3 3	5 3 5	3 3 3	1	1	1
FIREMAN	89	87	66	H H H	3 3 3	4 5 5	4 2 3	1	1	1
INSPECTOR	4	11	0	H M L	3 3 0	5 5 0	4 4 0	1	1	0
ALARM OPERATOR	6	0	0	M L L	3 0 0	2 0 0	3 0 0	1	0	0
MECHANIC	41	11	14	H H H	3 3 3	3 2 3	4 3 4	1	1	1

* OPERATING BATTERING TOOLS Battering tools are provided for jobs that require considerable weight and force. For this reason, more than one man is required to operate them. This calls for team work. Men need training in the use of the tools as well as in the safety precautions necessary. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	1	15	1	0	4	5	1	0	1
BASIC-GENERAL	21	2	0	5	23	4	0	10	23	0	0	6
IN-DEPTH	28	8	0	19	25	7	3	12	35	0	1	2

Statewide Advisory Committee recommendations

CAP 52 3 3BRE : ENGR 54 3 4BRE : F/M 84 3 1A3B : INSP 2 0 D 2BME : A/O 0 0 D 1AN- : MECH 3 3 L 1A2B

* OPERATE PRYING TOOLS There are many tools of various types used for prying in the fire service. Most of these tools are also adaptable to other uses. Firefighters should be knowledgeable in their intended use as well as in their use on other jobs. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Ninety percent of firemen use these tools at a high level of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	17	0	0	6	5	1	0	2
BASIC-GENERAL	25	2	0	7	24	6	0	8	19	0	0	3
IN-DEPTH H	36	8	0	23	30	7	3	14	43	1	1	4

Statewide Advisory Committee recommendations

CAP 57 3 3BRE : ENGR 61 3 4BRE : F/M 90 3 1A3B : INSP 2 3 D 2BME : A/O 0 0 D 1AN- : MECH 8 3 1AN-

* OPERATE LIGHTING TOOLS Where normal lighting is deficient, portable lights must be used. Portable lights come in many forms. Knowledge and understanding of their operation is necessary. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels; actual job performance is at high levels of frequency. Mechanics who perform the job in small departments may also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	25	0	0	6	5	1	0	2
BASIC-GENERAL	28	2	0	9	21	3	0	5	24	0	0	6
IN-DEPTH	30	8	0	17	23	7	3	11	27	0	0	2

Statewide Advisory Committee recommendations

CAP 56 3 3DRE : ENGR 63 3 3DME : F/M 72 3 2D3D : INSP 2 3 D 2DME : A/O 1 0 D 1A2B : MECH 17 3 2DME

TABLE 7. HANDLING FORCIBLE ENTRY AND MISCELLANEOUS TOOLS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE SAWING TOOLS	62	64	61	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	53	50	52	H M H	3 3 3	5 3 5	3 4 4	1	1	1
ENGINEER	51	51	40	M H H	3 3 3	4 3 3	3 4 4	1	1	1
FIREMAN	82	84	79	H M H	3 3 3	4 5 5	4 4 4	1	1	1
INSPECTOR	2	8	0	H M L	3 3 0	2 5 0	3 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	27	21	13	H H H	3 3 5	2 2 3	4 3 4	1	1	1
OPERATE BORING AND DRILLING TOOLS	38	61	58	H H H	3 3 3	3 3 5	3 3 4	1	1	1
CAPTAIN	31	37	46	H H H	3 3 3	5 3 5	3 4 4	1	1	1
ENGINEER	31	40	35	H H H	3 3 3	3 3 3	3 4 3	1	1	1
FIREMAN	50	86	77	H M H	3 3 3	4 3 4	3 2 4	1	1	1
INSPECTOR	0	8	0	L M L	0 3 0	0 4 0	0 3 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	32	32	15	H H H	3 3 5	3 3 3	3 3 4	1	1	1
OPERATE CUTTING TOOLS	62	65	62	H H H	3 3 3	5 3 5	4 3 4	1	1	1
CAPTAIN	45	46	47	H H H	3 3 3	5 4 5	4 4 4	1	1	1
ENGINEER	55	42	47	M H H	3 3 3	5 3 5	4 4 3	1	1	1
FIREMAN	83	90	80	H H H	3 3 3	4 5 5	4 3 4	1	1	1
INSPECTOR	2	11	0	H H L	3 3 0	2 4 0	3 4 0	1	1	0
ALARM OPERATOR	6	0	0	L L L	3 0 0	5 0 0	3 0 0	1	0	0
MECHANIC	41	42	17	H H H	5 3 5	3 2 3	4 3 4	1	1	1

• OPERATE SAWING TOOLS Sawing equipment comes in a variety of shapes and forms, some hand operated, others powered by gasoline or electric motors. Men will require training in the safe methods of operation. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters, or may utilize the job in the repair shop.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	19	0	0	4	4	1	0	2
BASIC-GENERAL	22	2	0	3	19	2	0	6	13	0	1	22
IN-DEPTH	31	8	0	16	27	7	2	13	40	0	0	4

Statewide Advisory Committee recommendations

CAP 52 3 YEAR : ENGR 43 3 YEAR : F/M 80 3 2DYD : INSP 2 3 D 2YRE : A/O 0 0 D 1AD- : MECH 16 3 YEAR

• OPERATE BORING AND DRILLING TOOLS Modern building construction has made it necessary for the fire service to use drilling and boring equipment. Some of this equipment is hand operated, some motor driven, some is of pneumatic type. Selection of the right tool for the job is essential. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels. Actual job performance falls principally on the fireman. Mechanics who perform the job may do so because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	27	0	0	6	5	0	0	1
BASIC-GENERAL	19	4	0	5	15	2	0	5	16	0	1	3
IN-DEPTH	11	2	0	7	18	6	2	9	34	0	0	1

Statewide Advisory Committee recommendations

CAP 43 3 YEAR : ENGR 35 3 YEAR : F/M 74 3 1AYD : INSP 1 0 D 2YRE : A/O 0 0 D 1ACD : MECH 19 3 2DYD

• OPERATE CUTTING TOOLS Cutting tools of many kinds with a wide variety of uses are carried by all companies. Men must be familiar with their use to work safely and efficiently. Captains are responsible for training men in other ranks in use of these devices. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters, or may utilize the job in the repair shop.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	3	22	4	0	5	3	0	0	0
BASIC-GENERAL	23	2	0	5	23	3	0	10	18	0	1	3
IN-DEPTH	32	9	0	19	20	7	3	10	38	0	0	3

Statewide Advisory Committee recommendations

CAP 47 3 YEAR : ENGR 45 3 YEAR : F/M 81 3 1AYD : INSP 2 3 D 2YRE : A/O 1 0 D 1AD- : MECH 24 3 YEAR

TABLE 7. HANDLING FORCIBLE ENTRY AND MISCELLANEOUS TOOLS CONTINUED

	MEN			FRQ	T-K	P-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE FUSING TOOLS	25	39	49	H H H	3 3 3	3 5 3	4 4 4	1	1	1
CAPTAIN	24	23	42	H L H	3 3 3	5 3 5	3 3 4	1	1	1
ENGINEER	21	25	23	M H L	3 3 3	3 5 3	3 4 4	1	1	1
FIREMAN	32	55	66	H H H	3 3 3	3 5 4	4 4 4	1	1	1
INSPECTOR	0	5	0	L L L	0 3 0	0 5 0	0 2 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	27	26	21	H H H	4 3 5	3 2 3	4 4 4	1	1	1
OPERATE AIR MOVING EQUIPMENT	40	50	52	H H H	3 3 3	3 5 5	3 3 4	1	1	1
CAPTAIN	50	29	11	H M H	3 3 3	5 4 4	4 4 4	1	1	1
ENGINEER	41	39	39	H H H	3 3 3	3 3 5	3 3 3	1	1	1
FIREMAN	44	68	79	H H H	3 3 3	3 5 5	3 4 4	1	1	1
INSPECTOR	2	11	0	M M L	3 3 0	5 5 0	4 4 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	16	18	H H H	3 3 3	3 2 2	4 3 4	1	1	1

* OPERATE FUSING TOOLS On many occasions, rescue and emergency squads are called upon to rescue victims trapped or confined by metal surroundings. Those charged with this responsibility must be well trained in the handling and use of oxyacetylene equipment so they can observe safety precautions and use good judgment. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels, although 23 percent of the firemen and 60 percent of the engineers perform the task. Mechanics may perform the job because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	0	9	0	0	3	1	0	0	0
BASIC-GENERAL	9	3	0	5	11	1	1	2	7	0	0	0
IN-DEPTH	11	2	0	6	18	9	2	8	37	0	0	3

Statewide Advisory Committee recommendations

CAP 37 3 3DRE : ENGR 23 3 3DME : F/M 60 3 2D3D : INSP 1 0 D 2DME : A/O 0 0 D 1AN- : MECH 22 4 2DME

* OPERATE AIR MOVING EQUIPMENT Air moving equipment may be used for bringing fresh air into an area as well as to blow out contaminated air, depending on the situation. This involves knowing how to set up and operate the equipment in the most advantageous place, and methods to use to aid the equipment for efficient operation or to correct conditions that may hamper the equipment. Air moving equipment may be electrically or gasoline powered. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels. They perform this task at high levels of frequency. Mechanics who perform the job may do so because they also serve as firefighters.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	1	11	1	0	5	4	0	0	1
BASIC-GENERAL	19	1	0	6	16	4	0	2	16	0	0	4
IN-DEPTH	15	4	0	10	23	15	2	9	29	0	0	0

Statewide Advisory Committee recommendations

CAP 19 3 3DRE : ENGR 39 3 3DME : F/M 73 3 1A3D : INSP 2 3 D 2DME : A/O 0 0 D 1AN- : MECH 17 3 1A2D

TABLE 8. LIFTING AND HOISTING EQUIPMENT

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE LIFTING TOCLS	39	48	26	H	H	H	3	3	3	3	3	5	4	3	3	1	1	1
CAPTAIN	46	30	13	H	L	H	3	3	3	3	4	5	4	4	4	1	1	1
ENGINEER	21	33	11	L	H	H	3	3	3	3	5	5	3	4	3	1	1	1
FIREMAN	52	68	38	H	M	H	3	3	3	4	3	5	4	3	4	1	1	1
INSPECTOR	0	4	0	L	H	L	0	3	0	0	4	0	0	3	0	0	14	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	41	32	38	H	H	H	3	3	3	2	3	3	4	3	3	1	1	1
OPERATE HOISTING AND PULLING EQUIPMENT	44	48	19	H	H	H	3	3	3	3	5	3	4	4	3	1	1	1
CAPTAIN	43	32	13	H	M	H	3	3	3	5	3	5	4	4	4	1	1	1
ENGINEER	33	39	14	M	H	H	3	3	3	3	5	3	3	4	3	1	1	1
FIREMAN	58	65	23	H	H	M	3	3	3	4	5	5	4	3	4	1	1	1
INSPECTOR	0	4	0	L	H	L	0	3	0	0	4	0	0	3	0	0	14	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	50	26	39	H	H	H	3	3	3	2	2	3	4	3	3	1	1	1

* OPERATE LIFTING TOOLS This involves the use of jacks of all types in rescue situations. It calls for knowledge of methods of application and load limits of jacks as well as their operation and maintenance. Firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics perform the job at high levels of frequency when they serve as firefighters. The task is performed in large departments, usually under emergency conditions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	15	3	0	3	2	0	0	1
BASIC-GENERAL	13	0	0	6	15	1	0	4	8	0	1	0
IN-DEPTH	19	7	0	11	17	7	2	8	15	0	0	3

Statewide Advisory Committee recommendations

CAP 20 3 3DRE : ENGR 17 3 3DME : F/M 44 3 2D3D : INSP 1 0 D 2DME : A/O 0 0 D 1A2B : MECH 39 3 2D3D

* OPERATE HOISTING AND PULLING EQUIPMENT This involves the use of blocks and tackles of various kinds. Methods of construction and application require considerable knowledge of rope loads, laws of leverage, and rigging procedures. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. Mechanics who perform the job may do so because they also serve as firefighters; they perform at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	1	8	0	0	0	1	0	0	1
BASIC-GENERAL	15	0	0	5	17	3	0	4	7	0	1	0
IN-DEPTH	20	7	0	10	24	11	2	11	11	0	0	4

Statewide Advisory Committee recommendations

CAP 19 3 3DRE : ENGR 20 3 3DME : F/M 33 3 2D3D : INSP 1 0 D 2DME : A/O 0 0 D 1A2B : MECH 39 3 2D3D

TABLE 9. HANDLING EXTINGUISHERS, GENERATORS AND PROPORTIONERS

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
OPERATE PRESSURE TYPE EXTINGUISHERS	75	66	64	M M H	3 3 3	4 4 4	3 3 4	1 1 1
CAPTAIN	74	48	31	H M H	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	71	47	31	M M H	3 3 3	4 4 4	3 3 3	1 1 1
FIREMAN	88	86	95	H H H	3 3 3	4 5 4	3 3 4	1 1 1
INSPECTOR	37	55	42	M M M	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	15	0	4	L L L	3 0 3	4 0 3	4 0 3	1 0 14
MECHANIC	23	5	9	M H H	3 3 5	4 4 3	3 3 4	1 1 1
OPERATE CHEMICAL REACTION TYPE EXTINGUISHERS	57	47	53	H M M	3 3 3	3 3 5	3 3 4	1 1 1
CAPTAIN	61	35	19	H M M	3 3 3	5 5 5	3 4 4	1 1 1
ENGINEER	55	46	24	M L M	3 3 3	4 4 5	3 4 3	1 1 1
FIREMAN	65	57	81	H M H	3 3 3	4 5 5	4 4 4	1 1 1
INSPECTOR	38	49	42	M M M	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	15	0	4	L L L	3 0 3	4 0 3	4 0 3	1 0 14
MECHANIC	5	5	2	H H L	3 3 3	3 4 4	4 3 2	14 1 1
OPERATE PUMP TYPE EXTINGUISHERS	38	41	62	H M H	3 3 3	4 3 5	3 3 3	1 1 1
CAPTAIN	26	36	38	H L M	3 3 3	5 3 5	3 3 4	1 1 1
ENGINEER	36	35	24	M M L	3 3 3	4 4 5	3 3 3	1 1 1
FIREMAN	48	49	92	H H H	3 3 3	4 5 5	3 3 3	1 1 1
INSPECTOR	19	36	33	M M M	3 3 3	3 3 3	3 3 4	1 1 1
ALARM OPERATOR	15	0	0	L L L	3 0 0	4 0 0	4 0 0	1 0 0
MECHANIC	9	5	10	H H M	3 3 4	4 4 3	4 3 3	1 1 1

* OPERATE PRESSURE TYPE EXTINGUISHERS Involves knowledge of the method of construction and operation of pressurized extinguishers, the class of fire for which they are suited, their effectiveness and limitations, and inspection and maintenance procedures. This job is part of the captain's responsibility for training men in other ranks. Engineers and firemen receive constant in-service training to maintain needed levels of skill. The great majority of firemen perform this operation at high frequency levels. Inspectors usually perform the job when training private fire brigades and similar groups.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	1	0	5	10	0	0	1	7	0	0	1
BASIC-GENERAL	31	4	0	10	32	8	0	15	15	0	0	3
IN-DEPTH	33	12	0	19	23	16	5	11	42	9	0	5

Statewide Advisory Committee recommendations

CAP 38 3 3DN- : ENGR 37 3 3DRE : F/M 93 3 1A3D : INSP 43 3 3DME : A/O 5 3 1A2D : MECH 10 3 2D3D

* OPERATE CHEMICAL REACTION TYPE EXTINGUISHERS Involves knowledge of the chemicals used in the extinguisher and its construction and operation; the class of fire on which it should be used, and the safety factors involved, as well as inspection, recharging, and maintenance. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training to maintain necessary skill levels, in addition to actual job performance. Inspectors usually train private fire brigades and similar groups in this job.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	0	2	10	0	0	0	5	0	0	2
BASIC-GENERAL	22	3	0	7	16	5	3	6	10	0	0	3
IN-DEPTH	27	10	0	18	17	10	2	11	38	9	0	1

Statewide Advisory Committee recommendations

CAP 27 3 3DN- : ENGR 31 3 3DRE : F/M 76 3 1A3D : INSP 42 3 3DME : A/O 5 3 1A2D : MECH 3 3 2D3D

* OPERATE PUMP TYPE EXTINGUISHERS Involves understanding of the pump construction and operation, and how to inspect and maintain pump. Captains perform this job as part of their responsibility to train men in other ranks. Engineers and firemen receive constant in-service training in order to maintain necessary skill levels in addition to actual job performance. As the size of a department increases, firemen become more involved in it. Inspectors usually perform the job when training private fire brigades and similar groups.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	3	0	0	0	6	0	0	2
BASIC-GENERAL	15	2	0	4	20	5	0	7	20	0	0	3
IN-DEPTH	15	8	0	13	16	10	3	8	36	0	0	1

Statewide Advisory Committee recommendations

CAP 36 3 3DN- : ENGR 27 3 3DRE : F/M 81 3 1A3D : INSP 32 3 3DME : A/O 2 0 D 1A2D : MECH 9 3 2D3D

TABLE 9. HANDLING EXTINGUISHERS, GENERATORS AND PROPORTIONERS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE FOAM GENERATORS	26	33	29	H L H	3 3 3	5 3 5	4 3 4	1	1	1
CAPTAIN	24	18	28	H L H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	28	33	14	M L M	3 3 3	3 5 5	4 3 4	1	1	1
FIREMAN	30	44	38	L L H	3 3 3	5 3 5	4 3 4	1	1	1
INSPECTOR	6	0	20	H L L	3 0 3	3 0 2	3 0 4	1	0	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	4 0 0	3 0 0	1	0	0
MECHANIC	5	5	5	H M L	3 3 5	3 4 3	4 3 4	14	1	1
OPERATE FOAM PROPORTIONERS	31	38	36	L L H	3 3 3	5 3 5	4 3 4	1	1	1
CAPTAIN	29	20	31	H L H	3 3 3	5 3 5	4 3 4	1	1	1
ENGINEER	39	37	31	L L H	3 3 3	5 4 5	4 3 4	1	1	1
FIREMAN	33	51	43	L L H	3 3 3	4 3 5	4 3 4	1	1	1
INSPECTOR	6	0	20	H L L	3 0 3	3 0 2	4 0 4	1	0	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	3 0 0	3 0 0	1	0	0
MECHANIC	9	11	11	H M L	3 3 5	4 4 3	4 3 4	1	1	1

* OPERATE FOAM GENERATORS Involves placing generator in appropriate position, laying necessary hose to generator, making hook-up, and calling for desired pressure. It also entails keeping hopper full of powder, and requires knowledge of type of power to use, proper pressure requirements and how the generator works. Captains are responsible for training all ranks. Engineers and firemen perform this job during training sessions as well as on the fire site. However, personnel in small and medium size departments perform the task less frequently than do personnel in large departments. Inspectors in one of the large departments surveyed are required to maintain proficiency in this task. This also is true of all of the tasks below, up to and including "Operation of Water Tower."

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	2	7	0	0	3	1	0	0	0
BASIC-GENERAL	7	0	0	3	18	5	1	8	6	0	0	0
IN-DEPTH	15	3	0	5	8	4	0	5	22	0	0	5

Statewide Advisory Committee recommendations

CAP 26 3 3DN- : ENGR 18 3 3DME : F/M 38 3 1A3D : INSP 16 3 3DME : A/O 1 0 D 1AN- : MECH 5 3 2D3D

* OPERATE FOAM PROPORTIONERS Involves laying out necessary hose, and making connections to proportioners. Operator must have a knowledge of how to set proportioner for proper mixture if not of the pre-set type, and the method used to get foam chemical into hose line. Also must have knowledge of pressure, and the gallons-per-minute requirements for proper mixture. Captains are responsible for training all ranks. Engineers and firemen perform this job during training sessions as well as at the fire site. Mechanics in medium and large departments usually perform the job as part of their repair and maintenance responsibility for such equipment.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	9	0	0	3	1	0	0	0
BASIC-GENERAL	11	0	0	3	18	3	0	7	11	0	0	0
IN-DEPTH	18	3	0	5	11	2	0	3	24	0	0	6

Statewide Advisory Committee recommendations

CAP 30 3 3DN- : ENGR 33 3 3DME : F/M 43 3 1A3D : INSP 16 3 3DME : A/O 1 0 D 1AN- : MECH 11 3 2D3D

TABLE 10. HANDLING HOSE, NOZZLES, AND FITTINGS

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
CONNECT AND OPERATE NOZZLES, VALVES, AND FITTINGS	77	78	85	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	71	67	74	H H H	3 3 3	5 4 5	4 4 4	1	1	1
ENGINEER	87	86	79	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	88	90	98	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	12	19	20	H H L	3 3 3	5 5 3	4 3 4	1	14	1
ALARM OPERATOR	2	0	0	L L L	1 0 0	2 0 0	2 0 0	14	0	0
MECHANIC	23	16	11	H M H	3 3 5	3 4 3	4 3 4	1	1	1
COUPLE AND UNCOUPLE HOSE	82	82	78	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	71	64	45	H H H	3 3 3	5 4 5	4 4 4	1	1	1
ENGINEER	96	93	78	H H H	3 3 3	5 5 5	3 4 4	1	1	1
FIREMAN	95	97	98	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	12	14	20	H M L	3 3 3	5 4 3	4 4 4	1	14	1
ALARM OPERATOR	2	0	0	L L L	1 0 0	2 0 0	2 0 0	14	0	0
MECHANIC	23	11	11	H M H	3 3 5	3 4 3	4 3 3	1	1	1
EXTEND AND REDUCE LINES OF HOSE	77	78	69	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	69	60	45	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	79	80	43	H H H	3 3 3	3 5 5	3 4 4	1	1	1
FIREMAN	92	96	94	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	10	8	20	M H L	3 3 3	5 5 3	4 4 4	1	14	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	5 0 0	3 0 0	1	0	0
MECHANIC	23	5	5	H M L	3 3 5	3 4 5	4 3 4	1	1	1

* CONNECT AND OPERATE NOZZLES, VALVES, AND FITTINGS Involves locating and connecting various types and sizes of nozzles, valves and fittings to hose, appliance, fire protection system and other types of couplings. Includes operating valves of various types, adjusting stream pattern settings on various types of nozzles, and directing fire streams to accomplish desired objectives. In order of importance, firemen, engineers and captains perform this job in departments of all sizes at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	3	7	0	0	2	5	0	0	1
BASIC-GENERAL	18	2	0	10	23	5	0	9	21	0	0	3
IN-DEPTH	51	15	0	28	47	10	0	24	59	2	1	7

Statewide Advisory Committee recommendations

CAP 72 3 3DRE : ENGR 81 3 3DME : F/M 96 3 2D3D : INSP 19 3 D 2DN- : A/O 0 0 D 1AN- : MECH 13 3 D 1AN-

* COUPLE AND UNCOUPLE HOSE Involves operating various size screw-thread type couplings to connect sections of fire hose, and to disconnect such sections as necessary; may involve the use of special wrenches in certain instances. Requires teamwork under certain conditions. While this job falls primarily to the fireman (95 percent and over performing it) engineers and captains also perform at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	3	10	0	0	4	6	0	0	1
BASIC-GENERAL	35	5	0	19	27	3	0	13	18	0	0	3
IN-DEPTH	40	11	0	23	46	7	0	16	54	0	1	5

Statewide Advisory Committee recommendations

CAP 51 3 3DRE : ENGR 82 3 3DME : F/M 98 3 1A3D : INSP 18 3 D 2DN- : A/O 0 0 D 1AN- : MECH 13 3 D 1AN-

* EXTEND AND REDUCE LINES OF HOSE Involves the use of valves, hose clamps, and fittings. Requires estimating length and diameter of hose to be used. Requires teamwork. Firemen, engineers, and captains, in the order named, perform this task at high rates of frequency. At least 92 percent of the firemen in the departments reporting were responsible for this work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	8	0	0	1	4	0	0	0
BASIC-GENERAL	28	3	0	11	25	5	0	10	17	0	0	4
IN-DEPTH	45	14	0	26	44	9	0	19	47	1	1	6

Statewide Advisory Committee recommendations

CAP 51 3 4DRE : ENGR 53 3 3DME : F/M 94 3 1A3D : INSP 17 3 D 2DN- : A/O 1 0 D 1AN- : MECH 8 3 D 1AN-

TABLE 10. HANDLING HOSE, NOZZLES, AND FITTINGS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	P	L
SIAMESE LINES OF HOSE	75	72	69	M M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	66	51	44	M L H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	81	75	44	M M L	3 3 3	5 5 5	3 4 4	1	1	1
FIREMAN	89	90	94	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	8	0	20	M L L	3 0 3	5 0 3	4 0 4	1	0	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	23	11	2	H M L	3 3 3	3 4 3	4 3 3	1	1	124
ROLL, FOLD, CARRY, REEL, AND UNREEL HOSE	82	79	78	H H H	3 3 3	5 5 5	3 4 4	1	1	1
CAPTAIN	69	58	45	H H H	3 3 3	3 4 5	3 4 4	1	1	1
ENGINEER	90	87	81	H H H	3 3 3	3 5 4	3 4 3	1	1	1
FIREMAN	97	97	98	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	10	5	20	M M L	3 2 3	5 4 3	4 4 4	1	14	1
ALARM OPERATOR	8	0	0	H L L	3 0 0	4 0 0	3 0 0	1	0	0
MECHANIC	27	5	7	H M H	3 3 3	3 4 5	3 3 3	1	1	1
OPERATE HOSE JACKETS AND CLAMPS	78	68	75	M H H	3 3 3	5 5 5	3 4 4	1	1	1
CAPTAIN	63	45	64	M M H	3 3 3	5 4 5	3 4 4	1	1	1
ENGINEER	91	81	66	M H H	3 3 3	3 3 5	3 4 3	1	1	1
FIREMAN	91	82	90	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	8	5	20	M L L	3 2 3	5 4 3	4 3 4	1	1	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	4 0 0	3 0 0	1	0	0
MECHANIC	27	5	4	H L L	3 3 5	5 4 3	3 3 3	1	1	1

• SIAMESE LINES OF HOSE Involves connecting two lines of hose to one line of hose through the use of a special adapter. May require teamwork. Firemen in departments of all sizes perform this task at high rates of frequency. Participation of engineers and captains is highest in small departments and declines as size of department increases. This task is almost always performed under emergency conditions.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	1	8	0	0	1	5	0	0	1
BASIC-GENERAL	26	3	0	10	25	5	0	10	12	0	0	3
IN-DEPTH	41	14	0	24	39	6	0	16	48	0	1	6

Statewide Advisory Committee recommendations

CAP 48 3 ALDE : ENGR 53 3 JCME : F/M 93 3 1A3 D : INSP 26 3 D 22N- : A/O 0 0 D 1A2D : MECH 6 3 D 1 AE-

• ROLL, FOLD, CARRY, REEL AND UNREEL HOSE Involves rolling hose by as many as six different methods; folding and carrying hose by different methods individually and as part of a team, both at street level and above-ground; and reeling and unreeling hose carried on apparatus, hose cart and standpipe reels, individually and as part of a team. This job is performed at high rates of frequency by firemen, engineers and captains in departments of all sizes, in the order named. Responsibility of firemen ranges upward from 97 percent. Participation of engineers and captains is highest in the small departments, lowest in the large.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	2	0	0	1	6	1	0	1
BASIC-GENERAL	35	3	0	15	28	3	1	10	29	0	0	3
IN-DEPTH	43	12	0	25	50	7	0	18	44	0	1	4

Statewide Advisory Committee recommendations

CAP 50 3 JCME : ENGR 83 3 JCME : F/M 98 3 1A3D : INSP 16 3 D 22N- : A/O 1 0 D 1A2- : MECH 10 3 D 1A2-

• OPERATE HOSE JACKETS AND CLAMPS Involves operating various types of hose jackets to stop leaks in damaged fire hose, connecting together dissimilar hose couplings, and operating various types of hose clamps to temporarily stop water from flowing through a hose line. This is primarily the responsibility of firemen, who perform at a high rate of frequency. Captains in large departments and engineers in medium-size and large departments also perform at high rates of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	1	11	0	0	3	5	0	0	2
BASIC-GENERAL	38	2	0	14	21	3	1	7	25	0	0	3
IN-DEPTH	33	22	0	19	35	2	0	13	42	0	1	4

Statewide Advisory Committee recommendations

CAP 61 3 JCME : ENGR 79 3 JCME : F/M 89 3 1A3D : INSP 17 3 D 22N- : A/O 1 0 D 1A2- : MECH 7 3 D 1A2-

TABLE 10. HANDLING HOSE, NOZZLES, AND FITTINGS CONTINUED

	PEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
REPLACE DAMAGED SECTION OF HOSE	62	57	63	H M H	3 3 3	5 5 5	3 4 4	1	1	1
CAPTAIN	53	29	41	H L M	3 3 3	5 5 5	3 4 4	1	1	1
ENGINEER	73	66	55	L M H	3 3 3	3 3 5	3 4 3	1	1	1
FIREMAN	70	73	81	H H H	3 3 3	5 5 5	3 4 4	1	1	1
INSPECTOR	4	5	20	H L L	3 2 3	5 5 3	4 3 4	1	1	1
ALARM OPERATOR	4	0	0	H L L	2 0 0	3 0 0	3 0 0	14	0	0
MECHANIC	27	11	5	H L H	3 3 3	3 2 3	3 3 3	1	1	1
LOAD HOSE ON CARRIER	72	67	79	H H H	3 3 3	3 3 3	3 4 4	1	1	1
CAPTAIN	60	50	48	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ENGINEER	86	84	77	H H H	3 3 3	3 3 3	3 4 4	1	1	1
FIREMAN	82	78	100	H H H	3 3 3	3 3 3	3 4 4	1	1	1
INSPECTOR	8	0	20	H L L	3 0 3	5 0 3	4 0 4	1	0	1
ALARM OPERATOR	6	0	0	H L L	3 0 0	3 0 0	3 0 0	14	0	0
MECHANIC	27	5	4	H L L	3 3 3	3 2 5	3 3 3	1	1	1

* REPLACE DAMAGED SECTION OF HOSE Involves obtaining undamaged section of hose to replace damaged section(s); carrying undamaged sections to proper location; utilizing clamps, valves or improvised methods to temporarily stop water flow; uncoupling damaged hose, coupling undamaged hose into hose line; and restoring water flow through hose line. Requires teamwork in many instances. Firemen perform this task at high rates of frequency in departments of all sizes; about half the captains in small departments and engineers in large departments also perform the job at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	7	0	0	1	0	0	0	0
BASIC-GENERAL	29	2	0	5	16	1	1	3	24	0	0	4
IN-DEPTH	27	3	2	13	35	8	0	11	38	0	1	4

Statewide Advisory Committee recommendations

CAP 41 3 3DRE : ENGR 59 3 3DRE : F/M 78 3 1A3D : INSP 16 3 D 2DN- : A/O 1 0 D 1AN- : MECH 10 3 D 1AN-

* LOAD HOSE ON CARRIER Involves loading various sizes of hose on fire apparatus by predetermined methods; inspecting hose and couplings during the loading process; and maintaining records of quantity and identity of hose loaded. This is primarily the fireman's job, performed in departments of all sizes at high levels of frequency. In large departments, 100 percent of firemen take part. Also in large departments, the function is performed at high frequency rates by 77 percent of engineers and 48 percent of captains.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	1	15	0	0	2	7	0	0	1
BASIC-GENERAL	36	1	2	11	18	1	1	6	26	0	1	5
IN-DEPTH	27	4	0	10	30	5	0	6	47	0	0	3

Statewide Advisory Committee recommendations

CAPS 50 3 3DRE : ENGR 79 3 3DME : F/M 95 3 1A3D : INSP 16 3 D 2DN- : A/O 1 0 D 1AN- : MECH 7 3 D 1AN-

TABLE 11. HANDLING HOSE

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
LAY SINGLE LINE OF HOSE	76	74	75	M H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	64	53	67	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	96	91	61	M H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	85	87	90	H H H	3 3 3	3 5 5	4 4 4	1	1	1
INSPECTOR	6	11	20	H M L	3 3 3	5 2 3	4 4 4	1	1	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	5 0 0	4 0 0	14	0	0
MECHANIC	23	5	9	H M M	3 3 3	3 4 5	4 3 4	1	1	1
LAY MULTIPLE LINES CF HOSE	75	73	75	M M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	61	54	65	M H M	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	93	86	65	M M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	86	87	90	M M H	3 3 3	3 5 5	4 4 4	1	1	1
INSPECTOR	6	5	20	H L L	3 2 3	5 2 3	4 4 4	1	14	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	5 0 0	4 0 0	14	0	0
MECHANIC	23	11	4	H M L	3 3 5	5 4 3	4 3 3	1	1	1
LAY HOSE LINES ABOVE STREET LEVEL	67	69	66	M M M	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	55	50	70	M M M	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	69	71	61	M M H	3 3 3	3 5 5	3 4 4	1	1	1
FIREMAN	82	85	72	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	4	5	20	M L L	3 3 3	4 5 3	4 4 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	18	5	4	H L L	3 3 2	3 4 2	3 3 2	1	1	1

* LAY SINGLE LINE OF HOSE Involves using a hose carrier or manpower to lay out a hose line between a water source and a desired point of water delivery. Includes spotting carrier at either water source or point of delivery, unloading necessary hose, nozzles, fittings and other necessary equipment, and laying out hose line by hand, or driving carrier as hose pays out and respotting apparatus at point of delivery or water source. May involve coupling and uncoupling hose, folding and carrying hose, connecting nozzles and fittings, and operating hose carrier pump at draft or a hydrant. Teamwork is required. Captains, engineers and firemen perform this task under emergency conditions at a high rate of frequency. They receive in-depth training from within the department.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	6	1	0	1	4	0	0	1
BASIC-GENERAL	27	4	0	9	22	3	1	12	12	0	0	0
IN-DEPTH	46	9	2	21	46	8	0	14	59	0	1	7

Statewide Advisory Committee recommendations

CAP 64 3 4DRE : ENGR 70 3 4DRE : F/M 89 3 2D3D : INSP 17 3 D 2DN- : A/O 1 0 D 1AN- : MECH 10 3 D 1A2B

* LAY MULTIPLE LINES OF HOSE Involves those operations indicated under "Lay Single Line of Hose," except that more than one hose line is laid in consecutive or simultaneous order. Teamwork is required. A majority of the captains, engineers and firemen in each size department are involved in this task, but frequency rates vary from moderate to high. Firemen in small departments usually lay multiple lines of hose under non-emergency conditions.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	4	0	0	1	2	0	0	0
BASIC-GENERAL	24	3	0	9	22	5	1	12	10	0	0	0
IN-DEPTH	46	8	2	21	47	9	0	16	63	0	1	8

Statewide Advisory Committee recommendations

CAP 63 3 4DRE : ENGR 72 3 4DRE : F/M 89 3 2D3D : INSP 16 3 D 2DN- : A/O 1 0 D 1AN- : MECH 7 3 D 1A2B

* LAY HOSE LINES ABOVE STREET LEVEL May involve folding or rolling hose, carrying hose aloft via stairways, fire escapes, ladders or elevators. May involve hoisting hose aloft, utilizing ropes and hose rollers, pike poles and straps or elevated platforms. Teamwork is required. Two-thirds of the ranks in each of the three sizes of department take part in this task; in the large department, firemen and engineers perform at high rates of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	5	0	0	0	1	0	0	0
BASIC-GENERAL	22	3	0	8	20	5	1	10	9	0	0	0
IN-DEPTH	41	8	2	17	43	9	0	16	56	0	1	7

Statewide Advisory Committee recommendations

CAP 65 3 4DRE : ENGR 63 3 4DRE : F/M 75 3 2D3D : INSP 16 3 D 2DN- : A/O 0 0 D 1AN- : MECH 6 3 D 1A2-

TABLE 11. HANDLING HOSE CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
CONNECT HOSE LINES TO AUXILIARY APPLIANCES	70	70	58	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	57	49	41	H L H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	84	70	41	L M H	3 3 3	3 5 5	3 4 4	1	1	1
FIREMAN	81	89	76	M M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	6	8	20	H M L	3 3 3	5 2 3	4 4 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	23	11	8	H L L	3 3 3	3 4 5	4 3 4	1	1	1
OPERATE HYDRANTS	71	75	70	H H H	3 3 3	3 5 5	3 3 4	1	1	1
CAPTAIN	48	35	29	H L H	3 3 3	3 3 5	4 3 4	1	1	1
ENGINEER	89	92	83	M H H	3 3 3	3 5 5	3 4 4	1	1	1
FIREMAN	83	93	88	H H H	3 3 3	3 5 4	4 4 4	1	1	1
INSPECTOR	8	13	20	H M L	3 3 3	5 2 3	3 3 4	1	1	1
ALARM OPERATOR	8	0	0	M L L	3 0 0	3 0 0	3 0 0	1	0	0
MECHANIC	32	5	9	H M H	3 3 3	3 4 3	4 3 3	1	1	1
OPERATE BATTERIES, MONITORS, TURRET PIPES, LADDER PIPES	52	67	56	M M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	46	48	33	M L H	3 3 3	5 3 5	4 4 4	1	1	1
ENGINEER	62	65	55	L M M	3 3 3	3 5 5	3 4 4	1	1	1
FIREMAN	60	85	70	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	2	0	20	L L L	3 0 3	5 0 3	3 0 4	1	0	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	5	4	H L M	3 3 5	4 4 3	4 3 3	1	1	1

* CONNECT HOSE LINES TO AUXILIARY APPLIANCES Involves laying single or multiple hose lines between water source and auxiliary appliance (sprinkler system or standpipe system) connection; removing caps or plugs from connection coupling(s) and connecting hose line(s) to connection coupling(s). May involve the use of valves and fittings. Teamwork is usually required. This job is primarily the responsibility of the firemen, who performs it usually under emergency conditions. In large departments, captains and engineers perform at high frequency but in lower proportions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	2	8	0	0	0	5	0	0	2
BASIC-GENERAL	27	4	0	9	22	4	1	6	14	0	1	4
IN-DEPTH	35	6	2	15	41	11	0	15	39	0	0	2

Statewide Advisory Committee recommendations

CAP 44 3 4DRE : ENGR 51 3 3DRE : F/M 78 3 2D3D : INSP 17 3 D 2DN- : A/O 0 0 D 1AN- : MECH 11 3 D 1AN-

* OPERATE HYDRANTS Requires a knowledge of the operating principles of the various types and styles of hydrants installed in the district or area served. Involves removing hydrant caps, connecting hose or other fittings to hydrant outlets, and operating hydrant valves. May involve interpreting color codes denoting water flow available from particular hydrants, and may involve minor trouble-shooting. Engineers and fireman participate in almost equal proportions in this task; firemen in departments of all sizes and captains and engineers in the large perform at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	10	1	0	1	6	0	0	1
BASIC-GENERAL	35	4	2	12	31	5	1	8	14	0	0	4
IN-DEPTH	31	6	0	11	33	4	0	12	50	0	1	1

Statewide Advisory Committee recommendations

CAP 32 3 3DRE : ENGR 85 3 4DRE : F/M 88 3 2D3D : INSP 17 3 L 3DRE : A/O 1 0 D 1AN- : MECH 13 3 2DN-

* OPERATE BATTERIES, MONITORS, TURRET PIPES, LADDER PIPES Involves spotting such appliances in the most advantageous location depending upon the objective, connecting hose lines to appliance intakes, operating valves as necessary, and directing and adjusting streams to accomplish desired objectives. This operation involves more firemen than personnel in other ranks. Engineers in small departments and captains in medium size departments usually perform at a low frequency rate under non-emergency conditions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	4	0	0	0	4	0	0	2
BASIC-GENERAL	17	1	0	5	24	5	1	10	10	0	0	0
IN-DEPTH	32	5	0	14	39	11	1	15	41	0	0	3

Statewide Advisory Committee recommendations

CAP 37 3 3DME : ENGR 57 3 4DRE : F/M 71 3 1A3D : INSP 15 3 D 2DN- : A/O 0 0 D 1AN- : MECH 5 3 D 1A2-

TABLE 11. HANDLING HOSE CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
OPERATE WATER TOWERS	16	35	21	H M H	3 3 3	3 5 5	4 4 4	1 1 1
CAPTAIN	9	17	8	H H M	3 3 4	5 5 5	4 4 4	1 1 1
ENGINEER	22	55	16	H M M	3 3 3	3 3 5	3 4 4	1 1 1
FIREMAN	17	40	30	H M H	3 3 3	5 5 5	3 4 2	1 1 1
INSPECTOR	0	0	20	L L L	0 0 3	0 0 3	0 0 4	0 0 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	18	5	0	H M L	3 3 0	3 4 0	3 3 0	1 1 0

* OPERATE WATER TOWERS The vast majority of fire departments do not include water towers, as such, in their apparatus complements. Water tower operations are performed by fire companies equipped with aerial ladders or elevated platforms. The operations specified for ladder pipes are included in "Operate Batteries, Monitors, Turret Pipes, Ladder Pipes," above, and would apply here. No more than 35 percent of personnel in the three sizes of department are concerned with this operation. In small departments, 16 percent of the staff perform at high frequency, whereas in large departments 21 percent of the men are involved at a high frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	1	3	0	0	0	3	0	0	1
BASIC-GENERAL	7	3	0	4	6	1	0	3	2	0	0	0
IN-DEPTH	8	1	0	3	26	7	0	9	16	0	0	0

Statewide Advisory Committee recommendations

CAP 9 3 3DME : ENGR 24 3 4DRE : F/M 30 3 1A3D : INSP 14 0 D 2DN- : A/O 0 0 D 1AN- : MECH 3 3 D 1A2-

TABLE 12. HANDLING LADDERS

	PEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
CARRY, RAISE, AND LOWER STRAIGHT, ROOF, ATTIC AND EXTENSION LADDERS	75	74	80	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	70	65	73	M	M	M	3	3	3	5	4	5	4	4	4	1	1	1
ENGINEER	67	62	69	M	M	M	3	3	3	3	3	5	3	4	4	1	1	1
FIREMAN	95	94	94	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	6	11	0	H	M	L	3	3	0	5	5	0	4	3	0	1	14	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	23	5	9	H	M	L	3	3	5	3	4	5	3	3	4	1	1	1
CLIMBING, LOCKING-IN ON, AND FOOTING LADDERS	75	75	76	M	M	M	3	3	3	5	3	5	4	4	4	1	1	1
CAPTAIN	73	74	80	M	M	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	65	57	42	M	M	M	3	3	3	3	3	3	3	4	4	1	1	1
FIREMAN	95	94	94	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	6	11	4	H	L	M	3	3	3	5	4	3	4	3	3	1	14	1
ALARM OPERATOR	2	0	0	L	L	L	2	0	0	2	0	0	3	0	0	14	0	0
MECHANIC	23	5	5	H	M	L	3	3	3	3	4	5	3	3	4	1	1	1
OPERATE AERIAL LADDERS AND ELEVATED PLATFORMS	23	34	36	H	H	H	3	3	3	5	5	3	4	4	4	1	1	1
CAPTAIN	12	28	22	H	H	H	3	3	3	5	3	5	4	4	4	1	1	1
ENGINEER	37	56	22	H	H	H	3	3	3	3	5	3	4	4	4	1	1	1
FIREMAN	23	32	50	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	0	6	0	L	L	L	0	3	0	0	5	0	0	4	0	0	1	0
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	5	0	0	4	0	0	124	0	0
MECHANIC	18	16	18	H	M	M	4	4	5	3	4	3	4	3	4	1	1	1

* CARRY, RAISE, AND LOWER STRAIGHT, ROOF, ATTIC AND EXTENSION LADDERS Requires the ability to select proper ladder based upon intended use, to locate on apparatus the ladder selected, to safely carry ladder to place of use, to select proper and safe area for base of ladder, to raise and/or extend ladder to correct location depending upon intended use, and to lower ladders safely and replace them on apparatus. Teamwork and coordination are required, especially where ladders exceeding 20 feet in length are involved. Emphasis on safety cannot be overstressed. This job is delegated primarily to the fireman.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	2	4	5	0	0	1	1	0	0	0
BASIC-GENERAL	26	1	0	14	24	6	1	15	9	0	0	0
IN-DEPTH	42	11	0	24	45	8	0	17	68	0	0	8

Statewide Advisory Committee recommendations

CAP 72 3 4DRE : ENGR 68 3 4DRE : F/M 94 3 2D3D : INSP 2 3 L 3DRE : A/O 0 0 D 1AN- : MECH 10 3 D 1AN-

* CLIMBING, LOCKING-IN ON, AND FOOTING LADDERS Climbing ladders requires the use of correct techniques and development of coordination and self-confidence. Locking-in ladders involves the use of a life belt or a "leg lock." Footing ladders involves bracing them at their base while they are in use. This job is primarily the responsibility of the fireman. In large departments, captains also perform it at high frequency levels. Engineers in all departments usually perform under non-emergency conditions.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	1	6	0	0	1	2	0	0	1
BASIC-GENERAL	28	1	0	12	23	3	1	14	19	0	0	4
IN-DEPTH	44	11	2	29	46	8	0	19	51	0	0	4

Statewide Advisory Committee recommendations

CAP 79 3 3DRE : ENGR 48 3 3DRE : F/M 94 3 2D3D : INSP 53 3DRE : A/O 0 0 D 1AN- : MECH 8 3 D 1AN-

* OPERATE AERIAL LADDERS AND ELEVATED PLATFORMS Involves spotting aerial ladder or elevated platform apparatus in the proper location, depending upon intended use and with maximum emphasis on safety; utilizing hand or hydraulically operated outrigger system to stabilize apparatus; and utilizing hydraulic system to raise, extend and place fly ladder on platform in proper position, depending upon intended use. In medium departments the man who operates aerial ladders is the engineer. In large departments engineers operate pumping engines; aerial ladders are operated by "auto-firemen" or just firemen.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	7	1	0	2	9	1	1	6	2	0	0	0
IN-DEPTH	16	4	0	9	24	3	0	6	33	0	0	1

Statewide Advisory Committee recommendations

CAP 22 3 3DRE : ENGR 29 3 4DRE : F/M 94 3 2D3D : INSP 1 0 D 2DN- : A/O 1 0 D 1AN- MECH 18 4 2D3-

TABLE 12. HANDLING LADDERS CONTINUED

	PEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
USE LADDERS AS IMPROVISED EQUIPMENT	65	62	61	L M L	3 3 3	3 5 5	4 4 4	1	1	1
CAPTAIN	50	50	46	L L L	3 3 3	5 3 5	4 4 4	1	1	1
ENGINEER	61	63	58	L M L	3 3 3	3 3 3	4 4 3	1	1	1
FIREMAN	85	75	75	H M H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	4	5	0	M L L	3 5 0	4 5 0	4 2 0	1	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	5	0	H M L	3 3 0	3 4 0	4 3 0	1	1	0
RELEASE AND LOWER FIRE ESCAPE LADDERS	11	16	36	H L H	3 3 3	3 3 3	3 2 3	1	1	1
CAPTAIN	7	11	14	H L L	3 3 3	5 3 5	3 4 3	1	1	1
ENGINEER	11	21	20	H L H	3 3 3	3 3 3	3 4 3	1	1	1
FIREMAN	13	17	54	H M H	3 3 3	5 5 5	3 2 4	1	1	1
INSPECTOR	8	12	15	H L L	3 3 3	3 2 3	4 2 2	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	H L L	3 0 0	3 0 0	4 0 0	14	0	0
CARRY, RAISE, AND LOWER POMPIER LADDERS	5	25	38	H L L	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	1	19	8	M L L	3 3 3	5 5 3	3 4 4	14	1	1
ENGINEER	13	10	19	L L M	3 3 3	3 3 3	4 4 3	1	1	1
FIREMAN	4	38	62	H L H	3 3 3	3 5 5	4 4 4	1	1	1
INSPECTOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	H L L	3 0 0	3 0 0	4 0 0	14	0	0

* USE LADDERS AS IMPROVISED EQUIPMENT Involves extending a ladder of insufficient length by attaching another ladder to it, using a ladder as a bridge between buildings or between a building and another ladder at upper levels, making an extension ladder into a step ladder, making an improvised sump using ladders and salvage covers, and making an improvised boom or crane using ladders and ropes. The fireman in a small department has to improvise because of rural fire protection and a lack of specialized equipment. Engineers usually perform this task under non-emergency conditions.

Post Employment Training

	S				H				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	3	2	0	0	0	2	0	0	0
BASIC-GENERAL	26	1	2	14	25	5	1	18	22	1	0	2
IN-DEPTH	32	10	0	20	34	8	0	13	37	0	0	4

Statewide Advisory Committee recommendations
CAP 47 3 4DRE : ENGR 59 3 4DRE : F/M 76 3 2D3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 2 3 D 1AN-

* RELEASE AND LOWER FIRE ESCAPE LADDERS Involves releasing and lowering the ladder or set of stairs which reaches to street level from the second floor landing on a fire escape. Fire escapes are constructed in various designs and a knowledge is required of how to operate those designs located within the area served. Firemen in large departments are primarily concerned with this job because it occurs in city conditions. There is a high percentage of repetitive training for this job.

Post Employment Training

	S				H				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	7	0	0	2	2	0	0	0
BASIC-GENERAL	5	0	0	3	5	0	0	1	9	0	0	4
IN-DEPTH	3	3	0	3	4	1	0	2	24	0	0	0

Statewide Advisory Committee recommendations
CAP 13 3 3DRE : ENGR 19 3 3DRE : F/M 43 3 1A3D : INSP 14 3 3DN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* CARRY, RAISE AND LOWER POMPIER LADDERS Pompier ladders are used to "scale" buildings. They are provided with a large hook which is placed into a window on a floor above. The hook supports the ladder as it is being climbed. "Scaling" is accomplished by progressively raising the ladder from a lower floor to the floor above. Pompier ladders are not in general use in California fire departments. Firemen in large departments are primarily concerned with this job because it occurs in city conditions; 62 percent perform it at a high frequency rate. There is a high percentage of repetitive training for this job.

Post Employment Training

	S				H				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	1	0	0	0	1	0	0	0
BASIC-GENERAL	2	0	0	1	8	0	0	3	4	0	0	1
IN-DEPTH	4	0	0	2	17	0	0	3	31	0	0	4

Statewide Advisory Committee recommendations
CAP 9 3 3DRE : ENGR 17 3 4DRE : F/M 51 3 2D3D : INSP 0 0 D 1BN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 13. HANDLING RESCUE EQUIPMENT

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
USE CANISTER TYPE GAS MASKS	28	43	34	M	M	H	3	3	3	3	3	5	4	4	4	1	1	1
CAPTAIN	28	39	32	M	M	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	13	29	16	L	M	H	3	3	3	3	3	5	4	4	3	1	1	1
FIREMAN	42	57	45	H	M	H	3	3	3	5	3	4	3	4	4	1	1	1
INSPECTOR	0	5	2	L	M	M	0	3	1	0	5	4	0	4	2	0	14	1
ALARM OPERATOR	2	0	0	L	L	L	2	0	0	2	0	0	3	0	0	1	0	0
MECHANIC	9	0	0	H	L	L	3	0	0	4	0	0	4	0	0	1	0	0
USE SELF-CONTAINED BREATHING APPARATUS	77	78	83	M	H	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	88	90	91	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	66	60	65	M	M	M	3	3	3	3	5	5	3	4	4	1	1	1
FIREMAN	93	93	94	H	H	H	3	3	3	5	5	4	4	4	4	1	1	1
INSPECTOR	12	16	2	L	L	M	3	3	1	5	5	4	4	4	2	1	1	1
ALARM OPERATOR	2	0	0	L	L	L	3	0	0	2	0	0	3	0	0	1	0	0
MECHANIC	23	5	6	H	M	L	3	3	5	5	4	5	4	2	4	1	2	1
USE DRAGGING TOOLS	10	12	8	H	H	L	3	3	3	3	5	4	4	4	2	1	1	1
CAPTAIN	8	5	2	H	L	L	3	3	1	3	3	5	4	4	1	1	14	1
ENGINEER	8	3	7	M	H	L	3	3	3	3	4	5	4	3	2	1	1	1
FIREMAN	12	19	12	H	M	H	3	3	3	3	5	4	4	4	3	1	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	2	0	0	L	L	L	2	0	0	2	0	0	2	0	0	1	0	0
MECHANIC	9	0	0	H	L	L	3	0	0	3	0	0	4	0	0	1	0	0

* USE CANISTER TYPE MASKS The canister type mask or breathing apparatus incorporates a canister capable of filtering certain toxic gases and absorbing others. Requires the ability to attach mask face-piece and harness to body, to test apparatus for leaks, and to read and interpret gauges and indicators. Requires a knowledge of the limitations of such equipment and the safety factors related to its use. May require using safety ropes and the ability to send and receive safety rope signals. In large departments this operation is performed at high levels of frequency. Captains and firemen are mostly involved in the use of canister-type gas masks.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	5	0	0	2	5	0	0	3
BASIC-GENERAL	9	1	0	3	13	3	1	8	4	0	0	0
IN-DEPTH	14	7	0	11	25	6	0	7	25	2	0	4

Statewide Advisory Committee recommendations

CAP 33 3 3DRE : ENGR 17 3 4DRE : F/M 46 3 2D3D : INSP 2 1 D 3DRE : A/O 0 0 D 1AN- : MECH 1 0 1AN-

* USE SELF-CONTAINED BREATHING APPARATUS Such apparatus includes both the type which supplies air or oxygen through a system of cylinders and regulators, and that which is capable of regenerating oxygen from the exhalations of the wearer. Requirements are similar to those listed under "Canister Type Masks" except that changing cylinders and interpreting low oxygen/air warning signals are additionally required. The mechanic has dual duties, as mechanic and fireman. This apparatus is used by the great majority of captains and firemen at high rates of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	2	3	2	0	0	0	3	0	0	1
BASIC-GENERAL	27	2	0	9	24	3	1	10	8	0	0	2
IN-DEPTH	43	10	0	20	52	10	0	18	72	2	0	7

Statewide Advisory Committee recommendations

CAP 91 3 3DRE : ENGR 65 3 4DRE : F/M 94 3 2D3B : INSP 5 3 3DRE : A/O 0 0 D 1AN- : MECH 8 3 D 1A2-

* USING DRAGGING TOOLS Dragging tools are used primarily to recover bodies from lakes, ponds, rivers, etc. Their use involves handling small boats, following systematic search procedures, and considering the effects of wind and water currents, the conditions on the bottom of the body of water to be searched, and the effects of underwater obstructions on searching procedures. Firemen usually perform this operation at a high rate of frequency but the percentages involved are small, ranging from 12 to 19 percent according to size of department.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	0	0	0	0	3	0	0	1
BASIC-GENERAL	5	0	0	1	5	0	0	4	5	0	0	3
IN-DEPTH	4	1	0	3	6	1	0	1	1	0	0	0

Statewide Advisory Committee recommendations

CAP 3 3 3DRE : ENGR 7 3 3DRE : F/M 13 3 1A3B : INSP 0 0 D 2BN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 13. HANDLING RESCUE EQUIPMENT CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
USE LIFE NET	10	55	56	L	L	L	3	3	3	5	3	5	4	4	4	1	1	1
CAPTAIN	8	37	58	L	L	L	3	3	3	5	3	3	4	4	4	1	1	1
ENGINEER	19	52	23	L	L	L	3	3	3	3	3	3	4	3	3	1	1	1
FIREMAN	8	71	73	L	L	H	3	3	3	4	5	5	4	4	4	1	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	5	0	0	3	0	0	1	0	0
MECHANIC	9	5	0	H	M	L	3	3	0	5	4	0	4	3	0	1	1	0
USE LIFE GUN, LINES, AND BELTS	32	50	42	L	L	L	3	3	3	3	5	5	3	4	4	1	1	1
CAPTAIN	38	38	62	M	L	L	3	3	3	5	3	3	4	4	4	1	1	1
ENGINEER	29	45	27	L	L	L	3	3	3	3	5	5	3	4	4	1	1	1
FIREMAN	38	64	43	L	L	M	3	3	3	3	5	4	3	3	4	1	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	5	0	0	3	0	0	1	0	0
MECHANIC	9	0	5	H	L	L	3	0	3	3	0	5	4	0	4	1	0	1
USE EVACUATOR	2	11	7	H	H	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	4	3	9	M	L	M	3	3	4	5	4	5	4	4	4	1	124	1
ENGINEER	2	4	7	L	H	H	3	3	3	0	5	5	4	4	4	14	1	1
FIREMAN	1	17	6	H	H	H	2	3	3	4	5	5	3	4	3	14	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	5	0	0	H	L	L	3	0	0	3	0	0	4	0	0	14	0	0

* USE LIFE NET Involves unfolding net, locking support ring in position, holding net in position to catch person who is to jump and moving net as necessary to properly catch jumping or falling person. This is an operation which requires 10 to 16 men. Teamwork and coordination are vital requirements. Medium and large departments do the most training in this area; small departments do not have the equipment. In large departments, 73 percent of firemen perform this operation at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	9	0	0	2	3	0	0	1
BASIC-GENERAL	3	0	0	2	20	2	0	6	10	0	0	0
IN-DEPTH	6	0	0	2	24	6	3	9	43	0	0	4

Statewide Advisory Committee recommendations

CAP 48 3 3DRE : ENGR 27 3 3DRE : F/M 64 3 1A3B : INSP 0 0 D 2BN- : A/O 1 0 D 1AN- : MECH 2 3 D 1AN-

* USE LIFE GUN, LINES AND BELTS Life guns include rifle and pistol types. They are used to fire a projectile with a small rope attached. The projectile may be fired from ground level to the top of a building, from one building to another, or across a waterway or impassible area. A life line is then attached to the small rope and drawn to the desired location. Life belts are used to assist in sliding on life lines. Use of these items requires coordination, self confidence, a knowledge of ropes, rope strengths and knots, and the highest regard for safety. Medium and large departments do the most training in this area; small departments usually do not have the equipment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	3	0	0	0	5	0	0	1
BASIC-GENERAL	17	1	0	8	24	0	0	9	14	0	0	0
IN-DEPTH	9	1	0	4	23	9	0	7	23	0	0	3

Statewide Advisory Committee recommendations

CAP 56 3 4DRE : ENGR 30 3 3DME : F/M 45 3 1A3B : INSP 0 0 D 2BN- : A/O 1 0 D 1AN- : MECH 5 3 D 1AN-

* USE EVACUATOR Evacuators are portable devices designed to remove persons from upper floors of a building. Their use is extremely limited in California. A few departments classify their lines and belts as evacuators; therefore, the data reflect this use.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	1	0	0	1	2	0	0	2	3	0	0	0
IN-DEPTH	1	0	0	1	8	1	0	4	3	0	0	0

Statewide Advisory Committee recommendations

CAP 8 3 3DRE : ENGR 6 3 3DME : F/M 7 3 1A3B : INSP 0 0 D 2BN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 13. HANDLING RESCUE EQUIPMENT CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
USE DETECTION INSTRUMENTS	33	36	60	H M L	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	34	51	63	L M L	3 3 3	5 3 3	4 4 4	1	1	1
ENGINEER	35	22	56	H L L	3 3 3	3 3 5	4 4 4	1	1	1
FIREMAN	36	40	65	H H M	3 3 3	3 5 5	4 4 4	1	1	1
INSPECTOR	21	39	16	M M M	3 3 3	4 4 4	3 4 3	1	1	1
ALARM OPERATOR	6	0	9	L L H	3 0 3	3 0 4	4 0 4	14	0	1
MECHANIC	5	16	6	H H L	3 3 5	3 4 3	4 4 4	14	1	1

* USE DETECTION INSTRUMENTS Detection instruments are electronic devices which, through various methods, detect the presence of combustible gases, nuclear radiation, fire, heat, smoke, toxic gases, leaks in pressure pipe and fittings, etc. Their use requires the ability to follow written and oral instructions and systematic procedures, and to interpret and analyze gauge and indicator readings. This is performed by captains in most situations. Captains in medium and large departments responded in the survey due to their responsibility for training. In large departments, 60 percent of captains, engineers and firemen perform this task, but at low or medium rates of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	4	0	1	7	0	0	1	4	1	0	1
BASIC-GENERAL	9	0	0	1	12	1	2	4	2	0	0	0
IN-DEPTH	18	3	0	7	17	3	0	4	54	2	0	2

Statewide Advisory Committee recommendations

CAP 57 3 3DME : ENGR 49 3 4DRE : F/M 58 3 1A3B : INSP 20 3 3D4D : A/O 7 3 D 1A2D : MECH 7 3 D 1AN-

TABLE 14. BUILDING EQUIPMENT

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE ELEVATORS	8	18	25	H L H	3 3 3	3 2 4	3 1 3	1	1	1
CAPTAIN	10	16	15	M L L	3 3 3	5 1 5	3 3 4	1	1	1
ENGINEER	3	15	5	L M H	1 3 3	2 4 5	2 3 4	1	1	1
FIREMAN	9	20	38	H L H	3 3 3	3 5 4	4 2 3	1	1	1
INSPECTOR	19	35	15	M H H	3 3 3	2 2 3	1 1 3	12	1	1
ALARM OPERATOR	0	0	4	L L H	0 0 3	0 0 3	0 0 3	0	0	1
MECHANIC	5	0	0	H L L	3 0 0	3 0 0	4 0 0	14	0	0
OPERATE FIRE DOORS AND SHUTTERS	16	21	26	H M H	3 3 3	3 3 3	3 4 3	1	1	1
CAPTAIN	18	23	39	H M H	3 3 3	5 3 5	4 4 4	1	1	1
ENGINEER	7	14	5	L M H	3 3 3	4 3 5	2 4 4	1	1	1
FIREMAN	20	24	28	H M H	3 3 3	3 5 4	3 3 3	1	1	1
INSPECTOR	37	48	49	H M H	3 3 3	3 3 3	3 4 3	1	1	1
ALARM OPERATOR	6	2	0	H M L	3 2 0	1 3 0	2 3 0	1	1	0
MECHANIC	5	0	0	H L L	3 0 0	3 0 0	4 0 0	14	0	0

* OPERATE ELEVATORS Requires a knowledge of the various types of elevators in use in the area or district served, an understanding of the operating principles of manually and automatically controlled elevators and a knowledge of those conditions which would preclude the use of elevators from a standpoint of safety. In large departments, 38 percent of firemen perform this task at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	7	0	0	0	2	0	0	0
BASIC-GENERAL	2	0	0	1	8	1	0	4	21	0	0	0
IN-DEPTH	3	0	0	1	0	0	0	0	2	0	0	0

Statewide Advisory Committee recommendations

CAP 15 3 3DRE : ENGR 6 3 3DRE : F/M 33 3 1A3D : INSP 19 3 2D3B : A/O 3 0 D 1AN- : MECH 1 0 D 1AN-

* OPERATE FIRE DOORS AND SHUTTERS Requires a knowledge of the operating principles of the various types of fire doors and shutters within the area or district served. Involves controlling the spread of fire, heat, smoke and fire gases by operating fire doors and shutters. In large departments, 39 percent of captains and 28 percent of firemen perform this task at high rates of frequency. Forty-seven percent of the inspectors in all departments operate fire doors and shutters.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	4	0	0	0	2	0	0	0
BASIC-GENERAL	9	4	0	5	11	0	0	4	10	6	6	3
IN-DEPTH	3	0	0	1	5	1	0	1	12	2	0	0

Statewide Advisory Committee recommendations

CAP 34 3 3DRE : ENGR 6 3 3DME : F/M 26 3 1A3D : INSP 47 3 3DME : A/O 1 2 D 2BME : MECH 1 0 D 1AN-

TABLE 15. MAKING DIAGNOSIS

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
INSPECT PATIENT AND DIAGNOSE SYMPTOMS	65	46	45	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	71	72	80	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	62	49	21	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	76	43	43	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	15	8	10	M M L	3 4 3	5 5 4	4 4 3	1	124	1
ALARM OPERATOR	15	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0
MECHANIC	9	0	7	H L L	4 0 5	4 0 5	4 0 4	1	0	1
OBSERVE SURROUNDINGS	64	48	51	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	70	67	85	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	56	41	47	H H M	3 3 3	5 5 5	3 4 4	1	1	1
FIREMAN	76	50	43	H H H	3 3 3	5 5 4	4 3 4	1	1	1
INSPECTOR	15	8	10	M M L	3 4 3	5 5 4	4 4 3	1	124	1
ALARM OPERATOR	15	10	0	H H L	3 3 0	5 2 0	3 3 0	1	1	0
MECHANIC	9	0	5	H L L	3 0 5	4 0 3	4 0 3	1	0	1
DETERMINE CASE HISTORY	23	25	18	H H H	3 3 3	5 5 4	4 4 4	1	1	1
CAPTAIN	46	43	53	H H H	3 3 3	5 4 5	4 4 4	1	1	1
ENGINEER	27	18	7	H H H	3 3 3	5 5 5	3 4 4	1	1	1
FIREMAN	17	25	10	H H H	3 3 3	5 5 4	4 4 4	1	1	1
INSPECTOR	10	8	10	M M L	3 4 3	5 5 4	4 4 3	1	124	1
ALARM OPERATOR	4	0	0	H L L	3 0 0	3 0 0	4 0 0	1	0	0
MECHANIC	9	0	7	H L L	3 0 3	4 0 4	4 0 4	1	0	1

• INSPECT PATIENT AND DIAGNOSE SYMPTOMS At each emergency where fire service personnel render care for the sick and injured, actual inspection by sight, feel and inquiry is made of the patient to determine the extent of the sickness or injury, so that the proper emergency care can be rendered. Captains in all size departments are involved in this task in greater percentages than are the other ranks. Captains, engineers, and firemen in small departments are equally involved at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	18	2	0	4	12	4	2	8	4	1	0	1
IN-DEPTH	45	19	2	21	34	14	2	13	41	10	5	6

Statewide Advisory Committee recommendations

CAP 78 3 4DME : ENGR 30 3 3D4D : F/M 48 3 1A3D : INSP 10 3 2DME : A/O 2 0 1A2B : MECH 6 4 D 1AN-

• OBSERVE SURROUNDINGS When fire service personnel are rendering emergency care for the sick or injured, the immediate area around the patient must be checked by inspection to collect all evidence that will aid the doctor in the treatment of the patient. This task falls principally upon the captain, who performs it at high rate of frequency. Small departments have a larger percentage of their personnel performing this task than do medium and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	6	0	0	4	8	0	0	0
BASIC-GENERAL	25	1	0	3	19	2	1	6	13	1	0	2
IN-DEPTH	31	13	2	16	23	9	1	7	29	8	5	3

Statewide Advisory Committee recommendations

CAP 81 3 3D4D : ENGR 47 3 3DME : F/M 49 3 1A3D : INSP 10 3 3DME : A/O 3 3 2DME : MECH 5 3 D 1AN-

• DETERMINE CASE HISTORY In rendering emergency care for the sick and injured, fire service personnel should investigate each case at the scene to determine if the patient has a past medical history or identification. The captain has the principal responsibility for this in departments of all sizes, with percentages ranging from 46 percent in the small department to 53 percent in the large. This is usually performed at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	1	2	0	0	0	3	1	0	0
BASIC-GENERAL	8	0	0	4	9	0	0	1	2	0	0	0
IN-DEPTH	14	4	1	7	13	7	2	7	14	7	5	2

Statewide Advisory Committee recommendations

CAP 51 3 3DME : ENGR 11 3 3DME : F/M 13 3 1A3D : INSP 10 3 3DME : A/O 1 0 D 1AN- : MECH 7 3 D 1AN-

TABLE 16. TREATING EMERGENCIES

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
MAINTAIN OPEN AIR PASSAGE	76	66	66	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	76	68	59	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	80	58	36	M M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	88	79	87	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	17	8	4	H M L	3 4 3	5 5 5	4 4 4	1	12	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	3 0 0	4 0 0	14	0	0
MECHANIC	9	0	5	H L L	3 0 3	4 0 3	4 0 2	1	0	1
PERFORM MANUAL OR MECHANICAL RESUSCITATION AND CARDIAC MASSAGE	74	66	61	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	76	73	51	H M H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	78	60	37	M M M	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	84	76	81	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	13	13	4	L M L	3 3 3	5 5 5	4 4 3	1	1	1
ALARM OPERATOR	10	0	0	M L L	3 0 0	5 0 0	4 0 0	1	0	0
MECHANIC	18	0	5	H L L	3 0 3	5 0 5	4 0 4	1	0	1
CONTROL BLEEDING AND TREAT WOUNDS	73	60	70	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	69	60	57	H L H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	75	56	70	M M M	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	85	71	82	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	17	18	4	M L L	3 4 3	5 5 5	4 4 4	1	1	1
ALARM OPERATOR	13	0	0	M L L	3 0 0	5 0 0	4 0 0	1	0	0
MECHANIC	18	0	5	H L L	3 0 3	5 0 5	4 0 4	1	0	1

* MAINTAIN OPEN AIR PASSAGE This involves removal of all obstruction for a free air passage from a patient's lungs to the outside air. These operations should utilize the accepted methods for fire service personnel. Firemen, captains and engineers in the order named perform this operation at high levels of frequency in departments of all sizes.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	2	1	0	1	3	1	0	0
BASIC-GENERAL	16	3	0	2	11	2	1	3	7	1	0	1
IN-DEPTH	56	15	1	25	52	15	2	26	55	3	0	8

Statewide Advisory Committee recommendations

CAP 63 3 ACRE : ENGR 42 3 ACRE : F/M 66 3 1A3D : INSP 6 3 3SME : A/O 1 0 2SME : MECH 5 3 1AS-

* PERFORM MANUAL OR MECHANICAL RESUSCITATION AND CARDIAC MASSAGE This involves the use of accepted methods, techniques, and equipment for fire service personnel in maintaining normal breathing and blood circulation in a patient whose functions have failed. Firemen are the primary source of this service, followed in importance by captains, in departments of all sizes.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	1	0	0	0	3	1	0	0
BASIC-GENERAL	19	1	0	3	10	3	1	5	6	0	0	0
IN-DEPTH	53	13	2	22	55	19	2	21	53	3	0	8

Statewide Advisory Committee recommendations

CAP 58 3 ACRE : ENGR 43 3 ACRE : F/M 61 3 1A3D : INSP 6 3 3SME : A/O 1 0 2SME : MECH 6 3 1AS-

* CONTROL BLEEDING AND TREAT WOUNDS This encompasses the emergency care rendered by fire service personnel to stop venous or arterial bleeding, and caring for all other wounds, to prevent further damage until patient can be treated by a doctor. Firemen and captains in small and large departments perform this function at high rates of frequency; the firemen provide the service most frequently.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	1	1	0	0	0	3	1	0	0
BASIC-GENERAL	19	2	0	3	22	3	1	4	9	2	1	2
IN-DEPTH	51	13	1	19	47	15	2	20	58	3	0	7

Statewide Advisory Committee recommendations

CAP 59 3 ACRE : ENGR 49 3 ACRE : F/M 61 3 1A3D : INSP 6 3 3SME : A/O 2 0 2SME : MECH 6 3 1AS-

TABLE 16. TREATING EMERGENCIES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
TREAT FOR HEART MALFUNCTION	64	47	54	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	64	46	39	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	56	47	25	M H M	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	78	54	76	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	15	13	2	H H L	3 3 3	5 5 5	4 4 4	1	1	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	3 0 0	4 0 0	14	0	0
MECHANIC	18	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0
TREAT FOR APOPLEXY	59	50	49	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	59	50	30	H H M	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	54	47	27	H M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	71	59	69	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	15	8	2	H M L	3 4 3	5 5 5	4 4 4	1	12	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	3 0 0	4 0 0	14	0	0
MECHANIC	18	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0
TREAT FOR RESPIRATORY, CIRCULATORY, OR NERVE POISONS	58	51	51	H M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	60	47	31	H L H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	49	50	27	H M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	72	61	74	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	15	8	2	H M L	3 4 3	5 5 5	4 4 4	1	12	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	3 0 0	4 0 0	14	0	0
MECHANIC	18	0	5	H L L	3 0 3	5 0 5	4 0 4	1	0	1

* TREAT FOR HEART MALFUNCTION Use of all accepted methods, operations, and equipment by fire service personnel to reduce further damage to heart and maintain a normal circulation of blood. This first-aid procedure, like others, is performed principally by firemen, followed in order of importance by captains. Captains and firemen perform this task at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	1	1	0	0
BASIC-GENERAL	13	0	0	3	12	3	1	5	7	1	0	0
IN-DEPTH	49	14	1	21	32	13	2	14	46	2	0	4

Statewide Advisory Committee recommendations

CAP 42 3 4DRE : ENGR 32 3 3DME : F/M 73 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 2 0 1AN-

* TREAT FOR APOLEXY All operations that are necessary in emergency care to maintain normal breathing and blood circulation in the patient. A normal distribution is indicated among all sizes of departments. The "H" and "M" show training, as this emergency does not often occur. Captains and firemen perform this task at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	2	0	0	0	1	1	0	0
BASIC-GENERAL	15	1	0	3	12	4	1	4	5	1	1	1
IN-DEPTH	42	12	1	18	36	14	2	15	42	1	0	2

Statewide Advisory Committee recommendations

CAP 37 3 4DRE : ENGR 33 3 4DRE : F/M 68 3 1A3D : INSP 5 3 3BME : A/O 1 0 2BME : MECH 2 0 1AN-

* TREAT FOR RESPIRATORY, CIRCULATORY, OR NERVE POISONS This task includes determining the type of poison involved through investigation or interview, or by observing symptoms, and utilizing decontamination, respiratory and circulation and personnel safety techniques. A normal distribution is indicated among all departments. The "H" and "M" column indicates training rather than performance, since this emergency does not occur very often. Inspector, alarm operator, and mechanic do this when acting in a dual capacity.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	3	0	0	0	1	1	0	0
BASIC-GENERAL	16	3	0	3	10	6	1	2	11	1	1	1
IN-DEPTH	39	12	1	18	38	15	2	19	39	1	0	5

Statewide Advisory Committee recommendations

CAP 37 3 4DRE : ENGR 33 3 4DRE : F/M 72 3 1A3D : INSP 5 3 3DME : A/O 1 0 2B3D : MECH 2 3 1AN-

TABLE 16. TREATING EMERGENCIES CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
TREAT BURNS	73	59	67	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	72	67	44	L	L	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	65	57	64	L	M	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	90	66	84	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	18	4	M	H	M	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	13	0	0	M	L	L	3	0	0	5	0	0	4	0	0	1	0	0
MECHANIC	18	5	5	H	L	L	3	3	3	5	3	5	4	3	4	1	1	1
TREAT FOR HEAT EXHAUSTION, HEAT STROKE, OR EXCESSIVE COLD	68	56	59	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	72	55	39	H	L	H	3	3	3	5	5	5	4	4	3	1	1	1
ENGINEER	60	48	32	L	M	M	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	83	67	83	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	18	4	M	M	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	3	0	0	4	0	0	14	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1
TREAT FOR FRACTURES, DISLOCATIONS, STRAINS, AND SPRAINS	67	55	64	H	M	L	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	66	50	43	H	L	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	61	56	59	M	M	L	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	82	66	81	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	13	4	M	M	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	13	0	0	M	L	L	3	0	0	5	0	0	4	0	0	1	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1

* TREAT BURNS All operations and methods that are required for emergency care of burns to prevent further damage, to reduce shock, and to maintain an open air way for the patient until under the care of a doctor. High percentages are shown here because of the frequency of this injury in the occupation. All ranks treat burns at high rates of frequency in large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	1	0	0	0	2	1	0	0
BASIC-GENERAL	22	3	0	4	18	5	2	10	16	1	1	2
IN-DEPTH	48	13	1	17	40	16	2	17	49	2	0	5

Statewide Advisory Committee recommendations

CAP 51 3 4DRE : ENGR 63 3 4DRE : F/M 82 3 1A3D : INSP 7 3 3DME : A/O 2 0 2B3D : MECH 7 3 1A2-

* TREAT FOR HEAT EXHAUSTION, HEAT STROKE, OR EXCESSIVE COLD The emergency care that is necessary to prevent shock, and provide comfort for the patient until in doctor's care. Firemen are primarily active in this area of first aid, followed by captains. Medium size departments encounter this emergency less frequently than do large and small departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	0	0	0	0	2	1	0	0
BASIC-GENERAL	21	3	0	3	15	4	1	6	14	1	1	2
IN-DEPTH	45	13	1	18	40	17	2	15	44	1	0	5

Statewide Advisory Committee recommendations

CAP 46 3 4DRE : ENGR 38 3 4DRE : F/M 81 3 1A3D : INSP 7 3 3DME : A/O 1 0 2B3D : MECH 7 3 1AN-

* TREAT FOR FRACTURES, DISLOCATIONS, STRAINS, AND SPRAINS Administering and supervising emergency care necessary to prevent further damage, to maintain free breathing, control serious bleeding, and prepare patient for transportation. This job is done frequently in first aid training. Captains, engineers and firemen are normally more involved in these treatments than other ranks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	1	0	0	0	0	1	1	0	0
BASIC-GENERAL	17	2	0	4	17	5	1	6	13	1	1	2
IN-DEPTH	48	13	1	19	38	14	2	19	50	2	0	5

Statewide Advisory Committee recommendations

CAP 47 3 4DRE : ENGR 59 3 4DRE : F/M 79 3 1A3D : INSP 7 3 3DME : A/O 2 0 2BME : MECH 6 3 1AN-

TABLE 16. TREATING EMERGENCIES CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
APPLY TREATMENT IN CHILDBIRTH EMERGENCIES	46	37	33	L	L	L	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	42	29	27	H	L	L	3	3	3	5	5	5	4	4	3	1	1	1
ENGINEER	35	47	22	L	L	L	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	61	42	43	L	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	13	14	2	M	L	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	3	0	0	3	0	0	14	0	0
MECHANIC	9	0	0	H	L	L	3	0	0	4	0	0	4	0	0	1	0	0
TREAT FOR TRAUMATIC, ELECTRICAL, DIABETIC, INSULIN, AND EMOTIONAL SHOCK	70	63	46	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	73	57	45	H	L	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	64	58	37	H	M	M	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	85	77	55	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	13	2	M	L	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	3	0	0	4	0	0	14	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1
TREATMENT FOR CONVULSIONS AND FITS	64	59	44	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	70	54	43	L	L	H	3	3	3	5	5	5	4	4	3	1	1	1
ENGINEER	53	48	33	M	M	L	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	78	74	52	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	13	2	M	L	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	3	0	0	4	0	0	14	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1

* APPLY TREATMENT IN CHILDBIRTH EMERGENCIES Those operations, techniques, and methods which are necessary in emergency care to transport mother to hospital before birth: to assist and maintain breathing in baby, to protect baby from injury and exposure; to assist the control of serious bleeding in the mother; to assist the doctor by protecting all discharged matter. Small departments operate ambulances or first aid vehicles. Large departments have no real need of this function as other agencies in the area are responsible.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	1	0	0	0	1	1	0	0
BASIC-GENERAL	16	4	0	4	13	3	0	3	6	2	1	2
IN-DEPTH	24	7	1	7	24	8	2	12	24	0	0	3

Statewide Advisory Committee recommendations

CAP 29 3 4DRE : ENGR 27 3 4DRE : F/M 45 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 1 0 1AN-

* TREAT FOR TRAUMATIC, ELECTRICAL, DIABETIC, INSULIN, AND EMOTIONAL SHOCK This involves provision of the emergency care that is necessary to prevent further damage, maintain free breathing and blood circulation, assist patient to treat himself, and see that patient is turned over to a doctor. All first aid treatment involves treatment for shock. Emotional shock is the most significant item here. Seventy percent of the personnel in small departments perform this function at high rates of frequency; the percentages decline as size of department increases.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	0	0	0	0	1	1	0	0
BASIC-GENERAL	23	4	0	4	25	9	1	10	11	2	2	2
IN-DEPTH	46	13	1	18	38	11	2	17	34	2	0	4

Statewide Advisory Committee recommendations

CAP 50 3 4DRE : ENGR 43 3 4DRE : F/M 62 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 6 3 1AN-

* TREATMENT FOR CONVULSIONS AND FITS All emergency care that must be performed to prevent patients from injuring themselves, and ensuring that free breathing is maintained. This treatment is provided by over two-thirds of the personnel in small departments. It is principally the responsibility of firemen, who provide it at high levels of frequency in both small and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	0	0	0	0	4	4	0	0
BASIC-GENERAL	19	3	0	4	18	5	1	5	12	2	1	3
IN-DEPTH	41	13	1	16	41	12	2	15	27	0	0	3

Statewide Advisory Committee recommendations

CAP 48 3 4DRE : ENGR 37 3 4DRE : F/M 58 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 6 3 1AN-

TABLE 16. TREATING EMERGENCIES CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
TREATMENT FOR EYE INJURIES	59	48	54	H	M	M	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	59	46	38	L	L	M	3	3	3	5	5	5	4	4	3	1	1	1
ENGINEER	44	40	29	L	M	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	77	59	76	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	15	13	2	M	L	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	10	0	0	M	L	L	3	0	0	5	0	0	4	0	0	1	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1
TREATMENT FOR MULTIPLE CASUALTIES	63	47	46	H	M	L	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	52	45	39	H	L	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	52	43	54	L	L	L	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	84	55	50	H	M	H	3	3	3	5	5	5	4	3	4	1	1	1
INSPECTOR	15	13	2	M	L	L	3	3	3	5	5	5	4	4	4	1	1	1
ALARM OPERATOR	8	0	0	M	L	L	3	0	0	4	0	0	4	0	0	1	0	0
MECHANIC	18	0	5	H	L	L	3	0	3	5	0	5	4	0	4	1	0	1

* TREATMENT FOR EYE INJURIES To perform the necessary care by washing and covering eye(s) and seeing that patient is in a doctor's care before leaving scene. This will include many minor eye injuries for which first aid treatment is given. Firemen are principally involved in applying this treatment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	0	0	0	0	1	1	0	0
BASIC-GENERAL	16	5	0	2	19	5	1	5	12	2	1	2
IN-DEPTH	39	12	1	16	29	9	2	14	41	1	0	3

Statewide Advisory Committee recommendations

CAP 42 3 4DRE : ENGR 33 4DRE : F/M 74 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 6 3 1AN-

* TREATMENT FOR MULTIPLE CASUALTIES Supervising and performing all operations and methods that should be performed in emergency care to segregate types of injuries, establish priorities of care until relieved by medical profession, and initiating assistance from necessary agencies. In small departments the firemen do first aid work. In large departments this work is done by members of a special first aid squad.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	0	0	0	0	1	2	0	0
BASIC-GENERAL	16	3	0	2	21	6	1	9	8	3	1	2
IN-DEPTH	41	13	1	16	24	11	2	14	36	2	0	3

Statewide Advisory Committee recommendations

CAP 41 3 4DRE : ENGR 52 4DRE : F/M 56 3 1A3D : INSP 5 3 3DME : A/O 1 0 2BME : MECH 6 3 D 1AN-

TABLE 17. TRANSPORTING PATIENT

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
PERFORM MANUAL LIFTS AND CARRIES	64	62	65	H M H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	59	54	56	H L H	3 3 3	5 5 5	4 4 3	1 1 1
ENGINEER	57	57	39	M M M	3 3 3	5 5 3	4 4 3	1 1 1
FIREMAN	81	76	86	H M H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	12	11	6	L M L	3 4 3	5 5 5	4 4 4	1 1 1
ALARM OPERATOR	4	0	0	H L L	3 0 0	3 0 0	4 0 0	1 0 0
MECHANIC	9	0	5	H L L	3 0 3	4 0 5	4 0 4	1 0 1
IMPROVISE AND PROVICE TRANSPORTATION	45	42	57	H M H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	47	43	67	H M H	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	43	48	27	H M L	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	54	47	70	H M H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	6	2	2	H M L	3 4 3	5 4 5	3 4 4	1 124 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	18	5	5	H L L	3 3 3	3 4 5	4 3 3	1 1 1

• PERFORM MANUAL LIFTS AND CARRIES Methods and techniques that should be used in emergency care to provide the best protection for the patients in moving them to a place of safety, or to an area from which they may be transported. Approximately 84 percent of all firemen are involved in this task, and usually at a high frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	1	0	0	0	2	1	0	0
BASIC-GENERAL	15	5	0	4	25	5	1	10	18	3	1	3
IN-DEPTH	43	12	1	19	36	10	3	16	45	2	0	5

Statewide Advisory Committee recommendations
CAP 56 3 NONE : ENGR 44 3 NONE : F/M EA 3 1A3D : INSP 8 3 3INS : A/O 1 0 D 1A2B : MECH 5 3 1A2B

• IMPROVISE AND PROVIDE TRANSPORTATION Requesting, supervising, and performing emergency care operations to move patient by hand, vehicle, or aircraft, without causing further damage, to a place of safety for treatment. Captains and firemen are equally involved in improvising and providing transportation for injured persons.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	0	0	0	0	1	0	0	0
BASIC-GENERAL	13	1	0	2	13	3	1	4	10	2	1	2
IN-DEPTH	28	9	1	13	29	8	2	15	46	7	5	3

Statewide Advisory Committee recommendations
CAP 62 3 NONE : ENGR 52 3 NONE : F/M EA 3 1A3D : INSP 2 3 3INS : A/O 0 0 1A2B : MECH 7 3 1A2-

TABLE 18. CONTRCLLING HAZARDS

		MEN		FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE FIRE CODES	35	48	62	H H H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	66	71	83	H H H	3 3 3	3 3 3	3 4 4	1	1	1
ENGINEER	35	44	43	H H H	3 3 2	3 3 3	3 4 4	1	1	1
FIREMAN	20	41	63	H H H	3 3 3	3 3 3	4 3 4	1	1	1
INSPECTOR	88	98	88	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	46	10	7	H H H	3 1 3	3 1 3	3 2 3	1	1	1
MECHANIC	18	5	5	H M L	3 3 3	2 2 3	4 3 3	1	1	1
USE STANDARDS AND PUBLICATIONS OF A.I.A., ENGINEERING AND SAFETY DEPARTMENT, AND N.F.P.A.	34	45	45	H H H	3 3 3	3 3 3	3 4 4	1	1	1
CAPTAIN	66	75	63	H H H	1 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	34	43	39	H H H	3 3 3	3 3 3	3 3 4	1	1	1
FIREMAN	22	36	40	H H H	1 3 1	3 3 3	4 3 3	1	1	1
INSPECTOR	85	98	100	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	10	1	13	H H H	3 3 3	3 3 3	3 4 3	1	1	1
MECHANIC	18	5	6	H H H	3 _ 3	2 3 3	3 3 4	1	124	1
UTILIZE LAWS, ORDINANCES, AND SAFETY REGULATIONS	46	51	63	H H H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	68	78	65	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	41	36	54	H H H	3 3 3	3 3 3	3 4 3	1	1	1
FIREMAN	38	47	68	H H H	3 3 3	3 3 3	4 3 3	1	1	1
INSPECTOR	88	98	89	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	46	11	7	H H H	3 3 3	3 3 3	3 3 3	1	1	1
MECHANIC	18	16	9	H H H	3 3 3	2 2 3	3 3 4	1	1	1

* UTILIZE FIRE CODES Requires knowledge of general content of federal, state and local codes related to fire prevention and control. Requires ability to locate sections of codes which pertain to specific problems, to interpret intent and purpose of codes and code sections, and to apply codes and code sections in a manner which will provide fire safety in the community. As the size of the department increases, the number of firemen and captains involved increases. The alarm operator in the small department also meets the public and advises them of fire rules and codes.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	7	3	1	1	7	1	1	0
BASIC-GENERAL	16	4	1	3	20	7	1	2	13	3	0	1
IN-DEPTH	17	11	6	6	21	10	7	11	41	20	16	2

Statewide Advisory Committee recommendations

CAP 79 3 3D4D : ENGR 42 3 2L3D : F/M 5[illegible] 3 1A3D : INSP 89 3 3D4D : A/O 13 3 1A2D : MECH 7 3 D 1A2D

* USE STANDARDS AND PUBLICATIONS OF AMERICAN INSURANCE ASSOCIATION, ENGINEERING AND SAFETY DEPARTMENT; AND NATIONAL FIRE PROTECTION ASSOCIATION The publications of these organizations may be referred to as sources of recognized good practices and utilized as standards where fire codes do not specify methods of providing fire safety. All ranks use these publications at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	5	1	0	0	7	0	0	0
BASIC-GENERAL	15	8	3	6	23	12	2	4	10	4	1	1
IN-DEPTH	13	5	2	5	17	8	6	9	27	20	16	2

Statewide Advisory Committee recommendations

CAP 65 3 3D4E : ENGR 39 3 2D3D : F/M 37 1 1A3D : INSP 97 3 3D4D : A/O 11 3 1A3D : MECH 8 3 1A2D

* UTILIZE LAWS, ORDINANCES, AND SAFETY REGULATIONS Laws and ordinances other than those classified as Fire Codes, in many instances, incorporate fire safety provisions. Examples include building codes, zoning ordinances, the Health and Safety Code, Rules and Regulations of the State Fire Marshal, The Government Code and The Governor's Industrial Safety Orders, to name a few. As the size of the department increases the number of firemen and captains involved increases. The alarm operator in the small department also meets the public and advises them of the fire rules and regulations.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	1	2	1	0	0	8	1	1	0
BASIC-GENERAL	19	5	2	2	26	9	1	6	13	3	0	1
IN-DEPTH	22	11	5	10	21	10	8	12	40	19	7	1

Statewide Advisory Committee recommendations

CAP 67 3 3D4E : ENGR 50 3 2D3D : F/M 61 3 1A3D : INSP 90 3 3D4D : A/O 14 3 1A3D : MECH 11 3 1A2D

TABLE 18. CONTROLLING HAZARDS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
ISSUE PERMITS, LICENSES, ETC.	47	26	36	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	57	47	53	H	H	H	3	3	3	2	1	3	3	3	3	1	1	1
ENGINEER	52	15	50	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	40	20	22	H	H	H	3	3	3	3	3	2	3	3	2	1	1	1
INSPECTOR	87	91	90	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	38	7	16	H	H	H	3	1	3	3	2	3	3	2	3	1	1	1
MECHANIC	14	0	0	H	L	L	3	0	0	3	0	0	3	0	0	1	0	0
CHECK PLANS AND BLUEPRINTS	7	17	8	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
CAPTAIN	4	33	15	H	L	H	3	2	3	3	3	3	3	3	3	1	1	1
ENGINEER	5	7	5	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
FIREMAN	2	13	3	M	H	H	2	2	2	3	3	2	4	3	2	1	1	1
INSPECTOR	87	87	73	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	4	1	0	H	H	L	3	4	0	3	2	0	3	4	0	14	1	0
MECHANIC	0	5	5	L	M	H	0	1	3	0	3	3	0	4	3	0	1	1
IDENTIFY FUNDAMENTALS OF TYPE I-II-III-IV-V CONSTRUCTION IN RELATION TO FIRE CONTROL	24	33	30	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	41	63	65	H	M	H	3	3	3	3	3	3	4	4	4	1	1	1
ENGINEER	20	19	44	M	H	H	3	3	2	1	3	3	4	3	3	1	1	1
FIREMAN	17	28	8	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
INSPECTOR	88	92	92	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* ISSUE PERMITS, LICENSES, ETC. Involves utilizing proper forms, establishing conditions and/or limitations under which permit or license may be issued, correctly filling out forms, explaining conditions and requirements to permittees and licensees, and maintaining records of permits and licenses issued. May involve a survey of the premises for which the permit or license is to be issued, and may involve collecting, safekeeping and recording money received for licenses or permits. Although this is primarily a function performed by the inspector, other personnel in the department issue permits, etc., at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	0	0	0	3	0	0	0	11	7	7	0
BASIC-GENERAL	28	1	0	2	18	0	0	0	17	0	0	0
IN-DEPTH	7	2	1	2	5	1	1	1	7	1	1	0

Statewide Advisory Committee recommendations

CAP 53 3 3DME : ENGR 45 3 2D3D : F/M 24 3 D 1AN- : INSP 90 3 DME : A/O 18 3 1A2D : MECH 2 0 D 1AN-

* CHECK PLANS AND BLUEPRINTS Involves examining and interpreting plans and blueprints to determine that proposed structures, additions to structures, and installations conform to applicable codes and ordinances and conform to recognized good fire safety practices. Seventy-five percent of the inspectors are involved in this task at a high rate of frequency. More captains perform this task in medium-size departments than in small or large, but at a low level of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	1	0	0	0	2	0	0	0
BASIC-GENERAL	3	1	0	1	11	2	0	1	3	0	0	0
IN-DEPTH	2	2	0	1	5	3	1	2	2	0	0	0

Statewide Advisory Committee recommendations

CAP 15 3 2DME : ENGR 5 3 D 2DME : F/M 4 2 D 1A2D : INSP 77 3 3D4D : A/O 1 3 1A2D : MECH 5 1 D 1AN-

* IDENTIFY FUNDAMENTALS OF TYPE I, II, III, IV, V CONSTRUCTION IN RELATION TO FIRE CONTROL Involves the ability to identify types of construction through interpretation of blueprints as well as by actual inspection of structures; an understanding of how various type of construction resist, retard or contribute to the spread of fire as well as the effects of fire on various types of construction and building materials; and a knowledge of type of construction requirements based upon type of occupancy. Inspectors and captains in departments of all sizes have this primary responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	0	2	2	0	0	8	0	0	0
BASIC-GENERAL	7	2	0	1	16	8	1	2	8	2	0	2
IN-DEPTH	10	6	3	3	15	9	2	5	13	11	7	1

Statewide Advisory Committee recommendations

CAP 62 3 3D4D : ENGR 38 3 2D3D : F/M 12 3 1A3D : INSP 92 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 18. CONTROLLING HAZARDS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY FIRE, LIGHTING, HEATING, POWER, AND DWELLING HOUSE HAZARDS AND THEIR SAFE-GUARD	39	47	74	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	54	75	87	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	33	32	64	H	H	H	3	3	3	3	3	3	4	4	3	1	1	1
FIREMAN	37	45	75	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	90	98	94	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	10	0	4	H	L	H	3	0	3	3	0	4	3	0	3	1	0	1
MECHANIC	0	0	5	L	L	L	0	0	3	0	0	3	0	0	3	0	0	1
IDENTIFY COMMONLY FOUND MISCELLANEOUS HAZARDS	43	49	82	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	53	81	85	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	39	33	73	H	H	H	3	3	3	3	3	3	4	4	3	1	1	1
FIREMAN	42	44	87	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	94	98	94	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	6	10	4	M	H	H	3	4	3	3	2	3	3	3	3	12	1	1
MECHANIC	0	0	5	L	L	L	0	0	3	0	0	3	0	0	3	0	0	1
APPLY MECHANICAL PRINCIPLE TO CHIMNEYS AND FLUES IN DWELLINGS	14	8	13	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	14	15	22	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	6	11	7	L	H	H	3	3	3	3	3	3	4	4	4	1	1	1
FIREMAN	14	2	11	H	M	L	3	3	3	3	4	3	4	3	3	1	1	1
INSPECTOR	65	66	51	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* IDENTIFY FIRE, LIGHTING, HEATING, POWER, AND DWELLING HOUSE HAZARDS AND THEIR SAFEGUARD Involves inspecting structures and their components and contents, in order to discover hazardous conditions. Requires a broad knowledge of why and how fires start and spread. Requires a general knowledge of the hazards of electrical systems; heating, cooling and ventilating systems; and other building components. Requires knowledge of fire hazards based upon occupancy. Requires developing practical methods of eliminating or safeguarding hazardous conditions or situations. The larger the department, the larger the number of inspections.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	1	4	1	0	1	3	0	0	0
BASIC-GENERAL	14	2	1	3	24	15	1	5	43	9	9	3
IN-DEPTH	18	7	4	4	18	9	5	7	28	11	7	1

Statewide Advisory Committee recommendations

CAP 81 3 3D4D : ENGR 55 3 2D4D : F/M 66 3 1A3D : INSP 94 3 3DME : A/O 4 3 D 1A2D : MECH 4 0 D 1AN-

* IDENTIFY COMMONLY FOUND MISCELLANEOUS HAZARDS Requires a knowledge of those factors which cause or contribute to miscellaneous fire hazards, and the ability to analyze a vast variety of hazardous situations and conditions. The larger the department, the larger the number of inspections.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	1	5	2	0	0	4	0	0	1
BASIC-GENERAL	15	4	1	2	26	17	1	6	45	11	9	4
IN-DEPTH	18	12	5	4	16	4	3	6	31	10	7	1

Statewide Advisory Committee recommendations

CAP 80 3 3D4D : ENGR 63 3 2D4D : F/M 75 3 1A3D : INSP 94 3 3DME : A/O 5 3 1A2D : MECH 4 0 D 1AN-

* APPLY MECHANICAL PRINCIPLE TO CHIMNEYS AND FLUES IN DWELLINGS Involves examining and evaluating chimneys and flues and estimating fire hazard potentials. Includes recognizing various types of flue construction, determining quantity of heat transferred based upon flue construction and condition, and relating heat transfer potentials to fire hazards due to proximity of combustible materials. Fifty-five percent of the inspectors in all departments apply these principles at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	1	0	0	0	4	0	0	0
BASIC-GENERAL	5	1	1	1	5	2	0	1	6	0	0	0
IN-DEPTH	6	1	0	1	2	2	1	1	3	2	0	0

Statewide Advisory Committee recommendations

CAP 20 3 3DME : ENGR 7 3 2D3D : F/M 10 3 1A2D : INSP 55 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 18. CONTROLLING HAZARDS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
APPLY MECHANICAL PRINCIPLE TO TYPES OF CONSTRUCTICN AND TYPES OF OCCUPANCY	14	15	16	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	16	28	45	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	4	13	8	H	H	H	3	3	3	4	3	3	4	4	4	1	1	1
FIREMAN	12	8	5	H	M	H	3	3	3	3	2	3	2	4	3	1	12	1
INSPECTOR	88	85	72	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* APPLY MECHANICAL PRINCIPLE TO TYPES OF CONSTRUCTION AND TYPES OF OCCUPANCY Involves estimating the effects of fire and fire control techniques upon structures based upon their type, and upon a structure's contents based upon occupancy. Includes examining structures and contents, evaluating structural integrity under fire conditions, and evaluating the effects of fire, heat, smoke and water upon contents of all types. Due to the nature of the area served, the captains in large departments are more involved in this job than their peers in smaller departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	2	1	0	0	3	0	0	1
BASIC-GENERAL	2	1	0	1	6	4	0	2	4	0	0	0
IN-DEPTH	4	3	1	2	4	6	1	2	9	7	5	1

Statewide Advisory Committee recommendations

CAP 39 3 3DME : ENGR 8 3 2D3D : F/M 6 3 1A2D : INSP 76 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 19. MAKING INSPECTIONS

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAKE EXTERIOR AND INTERIOR SURVEYS	53	51	58	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	72	90	73	M	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	51	47	74	M	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	50	42	48	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
INSPECTOR	92	94	91	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	6	0	0	M	L	L	3	0	0	3	0	0	3	0	0	12	0	0
MECHANIC	0	0	4	L	L	H	0	0	5	0	0	3	0	0	2	0	0	14
INSPECT AND TEST AUXILIARY FIRE FIGHTING EQUIPMENT	30	37	28	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	37	58	46	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	37	26	23	M	H	H	3	3	3	3	3	3	3	4	3	1	1	1
FIREMAN	23	34	21	H	H	M	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	85	91	85	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
ALARM OPERATOR	6	0	4	M	L	H	3	0	3	3	0	3	3	0	3	12	0	1
MECHANIC	14	21	4	H	H	H	3	3	5	5	3	3	4	3	3	1	1	14
INSPECT REFRIGERATICN, VENTILATION, AND HEATING SYSTEMS	28	35	26	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	32	65	52	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ENGINEER	20	19	17	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
FIREMAN	30	28	16	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	88	100	87	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	1	L	L	L	0	0	5	0	0	3	0	0	3	0	0	124

* MAKE EXTERIOR AND INTERIOR SURVEYS Involves visiting premises, gaining permission from occupant to conduct surveys, developing the organized procedures which are required to inspect all portions of the premises, examining and evaluating each and every condition and situation which may contribute to or detract from fire safety, making notes and sketches as the survey progresses, and discussing the results of the survey with the management of the premises surveyed. In addition to pre-fire planning, the captains in medium departments have fire prevention responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	0	6	1	0	0	2	0	0	0
BASIC-GENERAL	27	9	3	4	24	12	0	3	30	3	0	3
IN-DEPTH	19	7	3	5	21	10	4	7	26	18	16	0

Statewide Advisory Committee recommendations

CAP 76 3 3DME : ENGR 68 3 2D3D : F/M 47 3 1A3D : INSP 92 3 3D4D : A/O 1 0 D 1AN- : MECH 3 0 D 1AN-

* INSPECT AND TEST AUXILIARY FIRE FIGHTING EQUIPMENT Inspection activities include examining and evaluating the condition and adequacy of portable fire extinguishers, fire detection and signaling systems, standpipe and hose systems, yard main and hydrant systems, fire sprinkler systems, private fire pumps and water storage facilities, fire extinguishing systems and others. Testing activities involve following recognized test procedures, and interpreting test results. In addition to pre-fire planning, the captains in medium departments have fire prevention responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	0	4	1	0	1	1	0	0	0
BASIC-GENERAL	11	2	0	2	18	7	0	2	11	0	0	1
IN-DEPTH	13	6	2	3	14	6	4	10	15	7	5	0

Statewide Advisory Committee recommendations

CAP 46 3 3DME : ENGR 25 3 2D4D : F/M 23 3 1A3D : INSP 86 3 3D4D : A/O 4 3 D 1A2D : MECH 8 3 D 1AN-

* INSPECT REFRIGERATION, VENTILATION, AND HEATING SYSTEMS Involves understanding fire safety regarding such equipment, examining and evaluating fire hazard potentials and applying fire code and other recognized good practices to achieve fire safety. In addition to pre-fire planning, the captains in medium departments have fire prevention responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	2	1	0	1	3	0	0	0
BASIC-GENERAL	9	3	0	2	20	9	0	3	13	0	0	1
IN-DEPTH	15	5	2	3	11	5	3	4	9	5	5	0

Statewide Advisory Committee recommendations

CAP 51 3 3DME : ENGR 18 3 D 2DME : F/M 20 3 1A3D : INSP 88 3 3D4D : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 19. MAKING INSPECTIONS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INSPECT ELECTRICAL APPLIANCES AND SYSTEMS	31	35	44	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	35	61	59	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	25	30	43	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	31	28	39	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	88	87	87	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
ALARM OPERATOR	0	0	4	L	L	H	0	0	3	0	0	3	0	0	3	0	0	1
MECHANIC	0	5	0	L	H	L	0	4	0	0	2	0	0	3	0	0	1	0
INSPECT SPECIAL HAZARDS	32	30	39	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	37	49	63	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	24	14	21	H	H	H	3	4	3	3	3	3	3	4	3	1	1	1
FIREMAN	34	28	36	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	92	95	83	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
INSPECT STORAGE, HANDLING, AND TRANSPORTATION OF FLAMMABLE LIQUIDS AND GAS	22	32	22	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	23	48	65	H	H	H	3	3	3	3	3	3	4	3	4	1	1	1
ENGINEER	23	21	13	L	H	H	3	3	3	3	3	3	3	4	3	1	1	1
FIREMAN	18	30	6	L	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	90	94	84	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	5	0	L	H	L	0	3	0	0	2	0	0	3	0	0	1	0

- INSPECT ELECTRICAL APPLIANCES AND SYSTEMS Involves understanding the fire hazard potentials of electrical equipment and systems, examining and evaluating such equipment, and applying fire and electrical codes to achieve fire safety. May involve establishing liaison with agencies such as building, engineering or electrical departments, Division of Housing or Industrial Safety, or the State Fire Marshal's Office in order to provide fire safety in certain occupancies. Although this is primarily the inspector's function, 56 percent of captains are also involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	1	0	0	0	5	0	0	0
BASIC-GENERAL	14	4	0	1	21	10	0	3	21	2	0	1
IN-DEPTH	11	6	2	3	11	6	5	5	18	15	15	0

Statewide Advisory Committee recommendations

CAP 56 3 3[illegible] : ENGR 39 3 2[illegible] : F/M 37 3 1A3D : INSP 87 3 3[illegible] : A/O 3 0 D 1A2D : MECH 1 0 D 1A3-

- INSPECT SPECIAL HAZARDS Involves a broad knowledge of relatively uncommon fire hazards. Includes examining and evaluating the hazard potential of chemicals, dusts, fibers, and plastics, and the processes with which they are associated, to name a few. Requires application of fire codes and recognized practices in order to achieve fire safety. The captains in large departments are doing most of this work because it is more prevalent in large cities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	3	2	0	0	3	2	0	0
BASIC-GENERAL	12	4	1	2	16	6	1	1	15	0	0	3
IN-DEPTH	14	9	3	4	11	7	4	5	20	12	16	0

Statewide Advisory Committee recommendations

CAP 58 3 5 3[illegible] : ENGR 21 3 5 1[illegible] : F/M 35 3 1A3D : INSP 85 3 3[illegible] : A/O 0 0 1A3- : MECH 0 0 D 1A3-

- INSPECT STORAGE, HANDLING, AND TRANSPORTATION OF FLAMMABLE LIQUIDS AND GAS Flammable liquids and gases are utilized in widely varying quantities and under widely varying conditions in virtually every type of occupancy. Maintaining fire safe conditions with regard to the storage, handling and transportation of such materials is one of the most important functions of fire prevention. The captains in large departments are doing most of this work because it is more prevalent in large cities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	4	1	0	0	2	0	0	0
BASIC-GENERAL	7	2	1	2	13	10	1	2	8	1	0	0
IN-DEPTH	12	6	3	5	11	7	4	5	12	3	1	1

Statewide Advisory Committee recommendations

CAP 57 3 3[illegible] : ENGR 16 3 2[illegible] : F/M 11 3 1A3D : INSP 86 3 2[illegible] : A/O 0 0 D 1A3- : MECH 1 0 D 1A3-

TABLE 19. MAKING INSPECTIONS CONTINUED

	MEN			FRQ	T-K	M-S	PET	M-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
INSPECT STORAGE, HANDLING, AND TRANSPORTATION OF EXPLOSIVES	10	14	6	H H H	3 3 3	3 3 3	4 3 3	1	1	1
CAPTAIN	15	12	7	H L M	3 3 3	3 3 3	4 4 4	1	12	1
ENGINEER	10	6	8	H H H	3 3 3	3 3 3	4 3 3	1	1	1
FIREMAN	2	14	2	H H H	1 3 3	1 3 3	3 3 3	1234	1	1
INSPECTOR	79	75	81	M H H	3 3 3	3 3 3	4 3 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	0	0	L L L	3 0 0	3 0 0	3 0 0	1	0	0
MAKE COMPANY FIRE PREVENTION INSPECTIONS	59	60	86	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	68	80	95	H H H	3 3 3	3 3 3	4 3 4	1	1	1
ENGINEER	72	67	77	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	58	58	92	H H H	3 3 3	3 3 3	4 3 3	1	1	1
INSPECTOR	46	40	32	H H H	3 3 3	3 3 3	3 2 4	1	1	1
ALARM OPERATOR	6	0	0	M L L	3 0 0	3 0 0	3 0 0	12	0	0
MECHANIC	9	0	0	H L L	3 0 0	3 0 0	2 0 0	1	0	0

* INSPECT STORAGE, HANDLING, AND TRANSPORTATION OF EXPLOSIVES Requires a knowledge of the characteristics of various types of explosive materials and facilities and applying code requirements to achieve fire and explosion safety. This is primarily the inspector's assignment, and in medium-size and large departments it is performed at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	4	2	1	2	8	5	0	1	3	0	0	0
IN-DEPTH	4	3	0	2	4	4	3	4	3	2	0	0

Statewide Advisory Committee recommendations

CAP 9 3 D 3D4D : ENGR 8 3 2D3D : F/M 4 3 1A3D : INSP 80 3 3D4D : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* MAKE COMPANY FIRE PREVENTION INSPECTIONS Involves developing procedures for conducting inspections in a manner which will provide for complete coverage of district served and, at the same time, maintain an "in-service" status. Requires understanding of objectives of company inspection and knowledge of common and certain special fire hazards, department's system for eliminating hazardous conditions, and proper public relations techniques, and maintenance of required records. Larger departments are more involved in this area. Captains, engineers, and firemen usually make these inspections. Only 35 percent of the inspectors assist in the task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	2	0	0	8	3	0	2	4	0	0	0
BASIC-GENERAL	20	5	0	2	28	10	0	4	33	5	1	2
IN-DEPTH	23	9	0	5	24	12	5	8	48	14	10	5

Statewide Advisory Committee recommendations

CAP 90 3 3DME : ENGR 75 3 2DME : F/M 83 3 1A3D : INSP 35 3 3DME : A/O 1 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 20. REPORTING AND RECOMMENDING

	MEN			FRQ			T-K			M-S			PET			M-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAKE REQUIRED FIRE PREVENTION REPORTS	20	30	23	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
CAPTAIN	35	49	68	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ENGINEER	11	21	10	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
FIREMAN	13	26	7	H	H	M	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	100	85	94	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	6	1	4	H	H	H	4	3	3	3	3	3	4	1	3	1	0	1
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MAINTAIN FIRE PREVENTION RECORDS	10	18	22	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
CAPTAIN	7	40	60	H	H	H	3	3	3	1	3	3	3	4	3	1	1	1
ENGINEER	11	16	8	H	H	H	3	3	1	3	3	3	4	4	4	1	1	1
FIREMAN	4	8	9	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	90	89	80	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	19	2	4	H	H	H	3	5	3	3	3	3	3	3	3	1	1	1
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MAKE RECOMMENDATIONS FOR ELIMINATION OF FIRE HAZARDS	32	39	59	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	43	62	91	H	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	22	24	15	H	H	H	3	3	3	1	3	3	3	4	4	1	1	1
FIREMAN	30	35	65	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
INSPECTOR	90	91	88	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	8	10	7	H	H	H	3	5	3	5	1	3	3	2	3	14	1	1
MECHANIC	0	0	5	L	L	L	0	0	3	0	0	3	0	0	3	0	0	1

* MAKE REQUIRED FIRE PREVENTION REPORTS One of the purposes of a fire prevention inspection is to provide a written record for others. A report of some kind is usually required for every inspection conducted. The type of report required usually depends upon the record system utilized by the department. An understanding of the system, knowledge of the types of reports or report forms which are included in the system, how to prepare the reports, and how to communicate in writing are required. There is greater responsibility given to the captains in larger departments. All inspectors are involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	5	0	0	0	0	0	0	0
BASIC-GENERAL	10	4	1	3	11	3	0	3	15	1	0	3
IN-DEPTH	8	4	0	2	12	7	4	4	8	2	0	0

Statewide Advisory Committee recommendations

CAP 61 3 3DRE : ENGR 11 3 2D3D : F/M 10 3 1A3D : INSP 94 3 3D4D : A/O 4 3 1A2D : MECH 0 0 D 1AN-

* MAINTAIN FIRE PREVENTION RECORDS Requires a knowledge of the record system, the forms and reports which support the system, and the fundamentals of recording and filing. There is greater responsibility given to the captains in larger departments. Eighty-four percent of inspectors maintain these records.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	2	1	0	0	0	0	0	0
BASIC-GENERAL	7	1	0	1	7	1	0	3	13	1	0	1
IN-DEPTH	2	2	0	2	8	4	0	1	8	3	0	0

Statewide Advisory Committee recommendations

CAP 50 3 3DRE : ENGR 10 3 2DME : F/M 8 3 D 1A2D : INSP 84 3 2D3D : A/O 6 3 1A2D : MECH 0 0 D 1AN-

* MAKE RECOMMENDATIONS FOR ELIMINATION OF FIRE HAZARDS Recommendations are communicated both orally and in writing. They offer practical solutions for the elimination of fire hazards based on fire code requirements or recognized good practices. The individual carrying this assignment must know and understand basic psychology and maintain sound public relations, while conducting educational and enforcement activities necessary to provide fire safety. There is greater responsibility for this function given to the captains in larger departments. All inspectors are involved in this activity at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	3	0	0	0	0	0	0	0
BASIC-GENERAL	11	3	0	2	21	6	0	4	19	1	0	4
IN-DEPTH	16	9	3	6	15	9	4	4	39	4	1	0

Statewide Advisory Committee recommendations

CAP 80 3 3DME : ENGR 17 3 2D3D : F/M 56 3 1A3D : INSP 89 3 3D4D : A/O 8 3 1A2D : MECH 4 0 D 1AN-

TABLE 21. FIRE ALARM SYSTEM

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY DUTIES OF THE FIRE ALARM SUPERINTENDENT AND HIS PERSONNEL	14	9	3	H	H	H	3	3	3	3	3	3	4	3	3	1	1	1
CAPTAIN	26	15	9	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ENGINEER	3	5	1	L	H	H	1	3	3	2	5	3	1	3	3	0	1	1
FIREMAN	15	4	0	H	H	L	3	3	0	3	5	0	3	4	0	1	1	0
INSPECTOR	6	12	11	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	48	45	53	H	H	H	3	3	3	3	5	3	4	3	3	1	1	1
MECHANIC	0	0	2	L	L	M	0	0	3	0	0	2	0	0	3	0	0	124
RECEIVE AND TRANSMIT BOX ALARMS	26	22	8	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	23	25	24	H	H	H	3	3	1	5	5	1	4	3	3	1	1	1
ENGINEER	14	18	5	H	H	H	3	3	1	3	5	5	3	4	3	1	1	1
FIREMAN	33	18	0	H	H	L	3	3	0	5	5	0	4	4	0	1	1	0
INSPECTOR	6	7	6	M	H	H	3	3	3	3	5	5	4	4	4	1	1	1
ALARM OPERATOR	60	86	99	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
MECHANIC	5	0	1	H	L	M	3	0	5	5	0	3	3	0	4	1	01234	
RECEIVE AND TRANSMIT SPECIAL AND GREATER ALARMS	30	17	8	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	29	17	26	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	13	20	3	H	H	L	3	3	1	5	5	1	3	4	3	1	1	1
FIREMAN	35	12	0	H	H	L	3	3	0	5	5	0	4	4	0	1	1	0
INSPECTOR	10	5	6	H	H	H	3	3	3	3	3	5	4	4	4	1	1	1
ALARM OPERATOR	100	81	99	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* IDENTIFY DUTIES OF THE FIRE ALARM SUPERINTENDENT AND HIS PERSONNEL Requires knowledge and understanding of general fire department operations, street locations, and important buildings and familiarity with rules and regulations relating to equipment use, including those of the Federal Communications Commission. Involves receiving alarms and retransmitting to appropriate units. In small departments, personnel other than alarm operators are more involved in this area than is true of medium and larger departments, as some captains, inspectors, and firemen must do this work in addition to their other duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	4	0	0	1	3	0	0	0	1	0	0	0
IN-DEPTH	6	1	1	4	3	1	0	0	2	0	0	0

Statewide Advisory Committee recommendations

CAP 12 3 3DRE : ENGR 2 3 D 2DME : F/M 3 3 1A2D : INSP 11 3 D 1AN- : A/O 51 3 1A4D : MECH 1 0 D 1AN-

* RECEIVE AND TRANSMIT BOX ALARMS Involves observing punched tape, interpreting markings, and recording reading. Requires knowledge of and ability to use system designed to determine box locations and responding companies. Involves transmitting the alarm to the designated units. Personnel other than alarm operators in the small departments are more involved in this area than they are in other departments, as captains, engineers, and firemen must do this work in addition to their regular duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	4	0	0	0	0	0	0	0
BASIC-GENERAL	8	0	0	0	5	0	0	0	7	0	0	0
IN-DEPTH	16	0	0	1	12	1	0	1	1	0	0	0

Statewide Advisory Committee recommendations

CAP 24 3 2DME : ENGR 8 3 2DME : F/M 7 3 1A3D : INSP 6 3 2DME : A/O 92 3 1A3D : MECH 1 3 D 1A2B

* RECEIVE AND TRANSMIT SPECIAL AND GREATER ALARMS Requires a knowledge of code system for alarms. Must be able to interpret code meaning. Requires a knowledge of dispatching. Personnel other than alarm operators in the small departments are more involved in this area than are the other departments as captains, engineers, and firemen must do this work in addition to their regular duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	11	0	0	0	6	0	0	0	1	0	0	0
IN-DEPTH	18	1	1	0	11	1	0	1	7	0	0	0

Statewide Advisory Committee recommendations

CAP 25 3 2D3D : ENGR 7 3 3DME : F/M 6 3 1A3D : INSP 7 3 2DME : A/O 97 3 1A3D : MECH 0 0 D 1AN-

TABLE 21. FIRE ALARM SYSTEM CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
MAKE RUNNING CARD SYSTEM	8	3	6	H H H	3 3 3	3 3 3	3 4 3	1	1	1
CAPTAIN	8	1	24	H H H	3 3 3	3 4 3	2 4 3	1	1	1
ENGINEER	8	0	0	H H L	3 5 0	3 3 0	3 4 0	1	1	0
FIREMAN	7	1	0	H H L	4 5 0	3 5 0	3 4 0	1	1	0
INSPECTOR	2	6	0	M H L	3 3 0	3 3 0	4 4 0	124	1	0
ALARM OPERATOR	33	33	31	H H H	3 2 3	3 3 3	3 3 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
OPERATE PBX BOARD	9	12	4	H H H	3 3 3	5 5 5	4 4 3	1	1	1
CAPTAIN	3	4	0	H H L	3 3 0	4 3 0	4 4 0	1	1	0
ENGINEER	2	4	0	H H L	3 3 0	5 5 0	4 4 0	1	1	0
FIREMAN	13	11	5	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	4	9	11	M H H	3 3 3	2 3 5	2 4 4	1	1	1
ALARM OPERATOR	27	83	99	H H H	3 3 3	5 5 3	4 4 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
RECEIVE AND TRANSMIT STILL ALARMS	42	27	23	H H H	3 3 3	5 5 5	3 4 3	1	1	1
CAPTAIN	43	23	29	H H H	3 3 3	5 5 5	4 4 3	1	1	1
ENGINEER	23	19	28	H H H	3 3 3	3 5 5	3 3 4	1	1	1
FIREMAN	50	27	18	H H H	3 3 3	5 5 4	3 4 3	1	1	1
INSPECTOR	12	18	6	H H H	3 3 3	4 3 5	3 4 4	1	1	1
ALARM OPERATOR	100	89	99	H H H	3 3 3	5 5 5	4 4 4	1	1	1
MECHANIC	5	0	0	H L L	3 0 0	5 0 0	3 0 0	1	0	0

* MAKE RUNNING CARD SYSTEMS Requires a knowledge of city in relation to streets, mercantile areas, industrial areas, and residential areas; involves keeping up with annexations to the city or district, map reading, and a knowledge of fire station locations in relation to a given location. The code system must be understood and applied to the cards and the responding apparatus listed on each card. The alarm operator usually makes the card system; however, 24 percent of the captains in large departments also are involved in this task.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	4	0	0	0	1	0	0	0	5	0	0	0
IN-DEPTH	1	0	0	0	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 19 3 D 2DN- : ENGR 1 3 D 2DME : F/M 1 4 D 1A2D : INSP 1 3 D 1AN- : A/O 32 3 1A3D : MECH 0 0 D 1AN-

* OPERATE PBX BOARD Requires a knowledge and understanding of the operation and function of a PBX Board. This is primarily a function of the alarm operator. Only 27 percent of the alarm operators in small departments operate PBX Boards.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	3	0	0	0	1	0	0	0
IN-DEPTH	6	0	0	0	8	0	0	0	4	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 D 2DN- : ENGR 1 3 D 2DME : F/M 7 3 1A3D : INSP 9 3 D 1AN- : A/O 88 3 1A3D : MECH 0 0 D 1AN-

* RECEIVE AND TRANSMIT STILL ALARMS Requires knowledge of street and numbering system. Involves knowledge of method of transmission and ability to use it. Requires getting proper information regarding the alarm and recording the alarm. All alarm operators are involved in this task. Approximately 25 percent of the personnel in other ranks also are involved at a high level of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	1	0	0	0	5	0	0	0
BASIC-GENERAL	18	0	0	0	12	0	0	3	16	0	0	0
IN-DEPTH	17	1	1	0	14	1	0	2	2	0	0	0

Statewide Advisory Committee recommendations

CAP 30 3 2DME : ENGR 26 3 2DME : F/M 23 3 1A3D : INSP 10 3 D 1AN- : A/O 98 3 1A3D : MECH 1 0 D 1AN-

TABLE 21. FIRE ALARM SYSTEM CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
RECEIVE AND TRANSMIT TELEPHONE ALARMS	50	24	21	H H H	3 3 3	5 5 5	3 4 4	1	1	1
CAPTAIN	67	18	32	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	27	21	14	H H H	3 3 2	4 5 5	3 3 4	1	1	1
FIREMAN	53	22	19	H H H	3 3 3	5 5 4	3 4 3	1	1	1
INSPECTOR	25	14	6	H H H	3 3 3	3 5 5	3 4 4	1	1	1
ALARM OPERATOR	100	89	99	H H H	3 3 3	5 5 5	4 4 4	1	1	1
MECHANIC	14	0	0	H L L	3 0 0	5 0 0	3 0 0	1	0	0
HANDLE PRIVATE AND BUSINESS TELEPHONE CALLS	39	28	24	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	46	47	37	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	31	21	12	H H H	3 3 2	3 3 5	3 3 3	1	1	1
FIREMAN	34	20	21	H H H	3 3 3	3 3 2	3 4 3	1	1	1
INSPECTOR	44	58	41	H H H	3 3 3	3 3 2	3 3 3	1	1	1
ALARM OPERATOR	100	64	81	H H H	3 3 3	3 2 3	3 3 3	1	1	1
MECHANIC	23	0	4	H L H	3 0 3	3 0 1	2 0 1	1	0	0
PLACE STREET BOX BACK IN SERVICE	15	23	12	H H H	3 3 3	3 2 3	3 3 3	1	1	1
CAPTAIN	30	35	29	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ENGINEER	14	4	2	H L H	3 3 1	3 4 3	3 3 3	1	1	1
FIREMAN	12	25	8	H H H	3 3 4	3 2 3	3 3 4	1	1	1
INSPECTOR	8	15	8	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ALARM OPERATOR	8	35	33	H H H	4 3 3	5 3 3	4 3 3	1	1	1
MECHANIC	0	0	5	L L L	0 0 3	0 0 3	0 0 3	0	0	1

* RECEIVE AND TRANSMIT TELEPHONE ALARMS Involves knowledge of techniques and proper method for answering a phone and of how to help calm the excited person on the line to enable the receiver to get the necessary information. Requires a knowledge of rules, regulations and procedures regarding transmission of telephone alarms. In small departments over 50 percent of the captains and firemen receive and transmit telephone alarms at a high frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	24	1	0	0	10	0	0	2	11	0	0	0
IN-DEPTH	16	1	1	0	12	1	0	1	8	0	0	0

Statewide Advisory Committee recommendations

CAP 35 3 2DME : ENGR 17 3 2DME : F/M 25 3 1A3D : INSP 10 3 D 2DME : A/O 98 3 1A3D : MECH 2 0 D 1AN-

* HANDLE PRIVATE AND BUSINESS TELEPHONE CALLS Requires a knowledge and understanding of telephone courtesy. Involves knowledge of departmental regulations regarding telephone use for private calls. Requires recording complaints reported by phone. Usually handled by the alarm operator, the captain, or the inspector in departments of all sizes.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	4	0	0	0	3	0	0	0
BASIC-GENERAL	22	0	0	2	12	1	1	3	15	0	0	0
IN-DEPTH	8	1	1	1	11	1	0	2	6	0	0	0

Statewide Advisory Committee recommendations

CAP 41 3 2DME : ENGR 16 3 2DME : F/M 22 3 1A3D : INSP 44 3 3D4D : A/O 81 3 1A3D : MECH 6 3 D 1AN-

* PLACE STREET BOX BACK IN SERVICE Requires knowledge of the operation of a street box and what is required to place a box in service. Involves reporting to alarm headquarters when box is back in service. A higher percentage of alarm operators and captains perform this task than do the other ranks in the department.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	4	0	0	0	3	0	0	0
BASIC-GENERAL	8	1	0	0	14	0	0	2	3	0	0	0
IN-DEPTH	6	0	0	0	5	0	0	0	5	0	0	0

Statewide Advisory Committee recommendations

CAP 30 3 3DRE : ENGR 4 3 3DME : F/M 11 3 1A3D : INSP 9 3 D 1AN- : A/O 30 3 1A4D : MECH 4 0 D 1AN-

TABLE 21. FIRE ALARM SYSTEM CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
TEST FIRE ALARM SWITCHBOARD AND CIRCUITS	22	9	2	H H H	3 3 3	3 3 3	3 4 3	1	1	1
CAPTAIN	21	11	0	H H L	3 3 0	3 3 0	3 4 0	1	1	0
ENGINEER	9	0	0	H H H	3 3 3	3 2 3	3 3 3	1	1	1
FIREMAN	24	8	0	H H L	3 3 0	3 3 0	3 4 0	1	1	0
INSPECTOR	17	13	6	M H H	3 3 4	3 3 5	3 4 4	1	1	1
ALARM OPERATOR	83	61	96	H H H	3 3 3	3 3 3	3 3 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
USE FIRE ALARM PLANS AND SPECIFICATIONS	8	8	16	H H H	3 3 3	3 3 3	3 4 4	1	1	1
CAPTAIN	13	19	2	H H H	3 3 3	3 5 3	4 4 4	1	1	1
ENGINEER	4	0	26	H L H	3 0 3	3 0 5	4 0 4	1	0	1
FIREMAN	2	3	18	H H H	3 3 4	3 3 4	3 3 4	1	1	1
INSPECTOR	23	18	13	H M H	3 3 3	3 2 5	2 4 4	1	1	1
ALARM OPERATOR	63	62	38	H H H	3 3 3	5 3 3	3 4 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
REPAIR AND MAINTAIN FIRE ALARM EQUIPMENT	6	3	0	H H H	3 3 3	3 3 3	4 3 3	1	1	1
CAPTAIN	9	2	0	H H L	3 3 0	3 3 0	4 4 0	1	1	0
ENGINEER	5	0	0	M L L	3 3 0	3 2 0	4 3 0	1	1	0
FIREMAN	5	2	0	M H L	3 3 0	3 3 0	3 4 0	1	1	0
INSPECTOR	2	5	6	H H H	3 3 5	3 3 5	4 4 4	14	1	1
ALARM OPERATOR	10	25	15	H H H	4 3 3	3 2 3	4 3 3	1	1	1
MECHANIC	5	11	5	H M H	3 3 3	3 4 3	3 3 4	1	1	1

* TEST FIRE ALARM SWITCHBOARD AND CIRCUITS The person doing the testing must have a knowledge and understanding of electricity, circuits, and batteries. The job involves a knowledge of instruments for checking voltage and current and the ability to use and interpret the readings from the instruments. The fire alarm operators in small and large departments do this job while in the medium departments the fire alarm superintendent does the job. The captain and firemen in small departments are involved because of duplications of duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	1	0	0	0	1	0	0	0
BASIC-GENERAL	11	0	0	0	4	0	0	2	1	0	0	0
IN-DEPTH	8	0	0	0	4	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 4 3 D 2DR- : ENGR 1 3 2DME : F/M 4 3 1ADD : INSP 9 3 D 1AR- : A/O 89 3 1ADD : MECH 0 0 D 1AR-

* USE FIRE ALARM PLANS AND SPECIFICATIONS Job involves reading and interpreting blueprints for layout and installation of equipment. Requires comprehension of standards requirements and interpretation of specifications as set up to meet the standards. A greater percentage of personnel in large departments perform this task than in small and medium-size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	4	0	0	1	3	0	0	0	0	0	0	0
IN-DEPTH	3	0	0	0	4	1	0	1	15	0	0	0

Statewide Advisory Committee recommendations

CAP 6 3 D 2DR- : ENGR 20 3 2DME : F/M 14 3 D 1ADD : INSP 15 3 1ADD : A/O 45 3 1ADD : MECH 0 0 D 1AR-

* REPAIR AND MAINTAIN FIRE ALARM EQUIPMENT Must have knowledge and understanding of fire alarm systems. Requires knowledge of how to trouble-shoot electrical circuits and make necessary corrections. This is a specialized assignment usually carried out by a small percentage of alarm personnel. However, only inspectors in large departments and alarm personnel in small departments operate at the analysis/synthesis level of technical knowledge.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	1	0	0	0	0	0	0	0
IN-DEPTH	3	0	0	1	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 2 3 D 2DR- : ENGR 1 3 D 2DME : F/M 1 3 D 1ADD : INSP 5 3 D 1AR- : A/O 16 3 1ADD : MECH 6 3 D 1AR-

TABLE 21. FIRE ALARM SYSTEM CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY, ASSEMBLE, AND RECORD ENGINEERING DATA PERTAINING TO FIRE ALARM SYSTEMS	2	3	0	M H H	3 3 3	3 3 3	4 4 3	1	1	1
CAPTAIN	5	3	0	H H L	3 4 0	3 4 0	4 4 0	1	1	0
ENGINEER	0	3	0	L M H	0 3 2	0 3 3	0 4 3	0	1	1
FIREMAN	2	2	0	M H L	3 3 0	3 3 0	4 4 0	1	1	0
INSPECTOR	6	0	1	H L H	3 0 5	3 0 3	3 0 3	1	0	1
ALARM OPERATOR	4	17	17	M H H	2 3 3	2 2 3	3 4 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
UTILIZE PAMPHLETS AND GENERAL ORDERS APPLICABLE TO FIRE ALARMS	24	24	30	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	31	27	58	H H H	3 3 3	3 5 3	4 3 4	1	1	1
ENGINEER	10	12	31	H H H	3 3 1	5 3 5	3 3 4	1	1	1
FIREMAN	23	22	18	H H H	3 3 2	3 3 3	3 3 4	1	1	1
INSPECTOR	17	34	4	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	96	94	94	H H H	3 3 3	2 2 3	3 3 3	1	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

* IDENTIFY, ASSEMBLE AND RECORD ENGINEERING DATA PERTAINING TO FIRE ALARM SYSTEMS Requires knowledge of where data can be obtained, obtaining the data, and assembling. Involves indexing and filing a logical sequence. This job is done by the alarm superintendent or a representative of the installing agency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	0	0	0	0	1	0	0	0	0	0	0	0
IN-DEPTH	2	0	0	0	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 D 2DN- : ENGR 1 2 D 2DME : F/M 1 3 D 1A2D : INSP 2 3 D 2AME : A/O 15 3 1A3D : MECH 0 0 D 1AN-

* UTILIZE PAMPHLETS AND GENERAL ORDERS APPLICABLE TO FIRE ALARMS Involves knowledge of the various pamphlets applicable to fire alarms. Requires understanding of the content of the pamphlets to apply the recommendations. In medium sized departments the fire prevention bureau is more involved in this job. Small and large departments make this assignment to their company officers.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	4	0	0	0	0	0	0	0
BASIC-GENERAL	13	0	0	1	14	1	0	4	11	0	0	0
IN-DEPTH	8	0	0	0	6	1	0	1	19	2	0	0

Statewide Advisory Committee recommendations

CAP 50 3 3DRE : ENGR 25 3 3D3D : F/M 19 3 1A3D : INSP 10 3 1 N- : A/O 94 3 2D3D : MECH 0 0 D 1AN-

TABLE 22. REPORTS AND RECORDS

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
MAKE REQUIRED FIRE ALARM REPORTS	36	34	11	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	73	65	40	H H H	3 3 3	3 3 3	3 4 4	1	1	1
ENGINEER	23	42	5	H M H	3 3 3	3 3 3	3 3 4	1	1	1
FIREMAN	26	19	0	H H L	3 3 0	3 3 0	3 4 0	1	1	0
INSPECTOR	25	25	6	H H H	3 3 2	3 3 3	3 4 3	1	1	1
ALARM OPERATOR	100	66	84	H H H	3 3 3	3 3 3	3 3 3	1	1	1
MECHANIC	14	0	4	H L H	3 0 3	3 0 2	3 0 2	1	0	1
FILL OUT FIRE ALARM FORMS	33	28	11	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	63	59	38	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	24	24	5	H H H	3 3 3	3 3 3	3 3 4	1	1	1
FIREMAN	25	15	0	H H L	3 3 0	3 3 0	3 4 0	1	1	0
INSPECTOR	10	18	8	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	96	84	84	H H H	3 3 3	3 2 3	3 3 3	1	1	1
MECHANIC	14	0	4	H L H	3 0 3	3 0 2	3 0 2	1	0	1
MAINTAIN FIRE ALARM RECORDS	24	20	10	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	49	51	33	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	9	10	5	H M H	3 3 3	3 3 3	3 4 4	1	1	1
FIREMAN	17	9	0	H H L	3 3 0	3 3 0	4 4 0	1	1	0
INSPECTOR	19	20	8	H H H	3 3 3	3 3 3	3 4 3	1	1	1
ALARM OPERATOR	100	64	84	H H H	3 3 3	3 3 3	3 3 3	1	1	1
MECHANIC	14	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0

* MAKE REQUIRED FIRE ALARM REPORTS Must have a knowledge of techniques of report writing and types of reports involved. Must understand the necessity of detail in certain reports and the recording of pertinent information. The assignment is predominantly one in which alarm operators and captains in departments of all sizes are involved at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	3	0	0	0	1	0	0	0
BASIC-GENERAL	21	1	0	2	16	3	0	3	7	0	0	0
IN-DEPTH	10	1	1	1	16	5	1	2	4	1	0	0

Statewide Advisory Committee recommendations

CAP 48 3 3DRE : ENGR 13 3 2D3D : F/M 6 3 1A2D : INSP 11 3 D 2 N- : A/O 84 3 2D3D : MECH 5 3 D 1AN-

* FILL OUT FIRE ALARM FORMS Requires knowledge of the proper form to use and departmental procedure for completion. Alarm operators and captains in departments of all sizes are involved in this task at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	2	0	0	0	1	0	0	0
BASIC-GENERAL	19	1	0	1	11	2	0	1	2	0	0	0
IN-DEPTH	10	1	1	1	14	2	0	1	8	0	0	0

Statewide Advisory Committee recommendations

CAP 44 3 3DRE : ENGR 10 3 2D3D : F/M 5 3 1A2D : INSP 10 3 D 1 N- : A/O 3 2D3D : MECH 5 3 D 1AN-

* MAINTAIN FIRE ALARM RECORDS Involves knowledge and understanding of methods of maintaining records. Requires gathering the information daily so that records can be kept up to date. This is an assignment in which the fire alarm operator and captain in departments of all sizes are involved at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	3	0	0	0	1	0	0	0
BASIC-GENERAL	12	1	0	1	7	1	0	1	6	0	0	0
IN-DEPTH	8	1	1	0	11	3	0	1	3	0	0	0

Statewide Advisory Committee recommendations

CAP 40 3 3DRE : ENGR 6 3 2D3D : F/M 4 3 1A2D : INSP 11 3 D 1 N- : A/O 84 3 2D4D : MECH 2 0 D 1AN-

TABLE 23. STRATEGY

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAKE SIZE-UP	43	35	29	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	95	96	91	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	31	39	43	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	40	15	1	H	H	L	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	12	15	0	H	H	L	3	3	0	5	5	0	4	4	0	1	12	0
ALARM OPERATOR	0	10	0	L	H	L	0	2	0	0	5	0	0	4	0	0	1	0
MECHANIC	14	0	5	H	L	L	5	0	3	4	0	2	4	0	4	1	0	12

* MAKE SIZE-UP Involves gathering facts before a fire or other incident occurs as well as at the time of the fire or incident; interpreting facts; evaluating alternatives; deciding upon a course of action and implementing a plan of action under mental, and sometimes emotional and physical, stress. Requires remaining emotionally stable, formulating sound decisions and communicating objectives and techniques under pressure. Usually the function of fire service officers, but may be performed by other personnel due to a variety of conditions. This job is primarily the captains' responsibility. Firemen in small departments often have to assume some of the captain's responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	1	1	0	0	0	0	0	0	0
BASIC-GENERAL	10	3	1	4	7	3	1	5	4	2	0	0
IN-DEPTH	28	18	1	11	25	18	2	13	24	11	5	3

Statewide Advisory Committee recommendations

CAP 92 3 4DME : ENGR 41 3 3D4D : F/M 8 3 1A3D : INSP 3 3 2 ME : A/O 1 0 1A2D : MECH 6 3 D 1AN-

TABLE 24. TACTICS

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
UTILIZE RESCUE TECHNIQUES	73	69	71	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	96	96	95	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	62	47	48	H	M	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	85	78	77	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	8	13	0	H	L	L	3	3	0	5	5	0	4	3	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	5	3	H	L	L	3	3	3	4	2	5	3	3	4	1	1	12
UTILIZE EXPOSURE TACTICS	68	67	50	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	98	96	95	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	50	42	44	M	H	H	3	3	3	5	5	5	4	4	4	1	1	1
FIREMAN	81	78	38	H	H	M	3	3	3	5	5	4	4	4	4	1	1	1
INSPECTOR	10	6	0	H	H	L	3	3	0	3	1	0	4	4	0	11234		0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	5	5	H	M	L	3	3	3	5	2	2	3	3	4	1	1	12
UTILIZE VENTILATION METHODS	75	71	58	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
CAPTAIN	98	96	95	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	59	47	20	M	M	H	3	3	3	5	5	5	4	4	3	1	1	1
FIREMAN	89	82	62	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	12	14	0	M	H	L	3	3	0	5	5	0	3	3	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	9	5	5	H	M	L	4	3	3	4	2	2	3	3	4	1	1	12

* UTILIZE RESCUE TECHNIQUES Involves protecting persons exposed to fire or other hazardous situations, removing persons from dangerous situations, and providing temporary care for injured persons until medical attention can be obtained. Ninety-five percent of the captains and 78 percent of the firemen are involved in this task, and at a high rate of frequency. They receive training in depth within the department in rescue techniques.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	4	0	0	0
BASIC-GENERAL	25	9	3	9	24	11	1	12	10	2	1	2
IN-DEPTH	46	25	1	28	44	21	5	23	56	10	7	7

Statewide Advisory Committee recommendations

CAP 95 3 3DME : ENGR 50 3 3DME : F/M 78 3 2D3D : INSP 3 3 3 ME : A/O 0 0 D 1AN- : MECH 5 3 D 1AN-

* UTILIZE EXPOSURE TACTICS Involves preventing a fire from spreading from its place or building of origin to other buildings or property, through the use of a wide variety of equipment and techniques. The firemen in small and medium departments must perform this job on their own initiative, while in the large department they are working under the direction of an officer.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	2	3	0	0	0	0	1	0	0	0
BASIC-GENERAL	17	6	1	7	23	7	1	9	14	4	0	2
IN-DEPTH	44	28	4	25	41	22	6	23	34	10	6	5

Statewide Advisory Committee recommendations

CAP 96 3 3DME : ENGR 44 3 3DME : F/M 49 3 1A3D : INSP 2 3 3 RE : A/O 0 0 D 1AN- : MECH 7 3 D 1AN-

* UTILIZE VENTILATION METHODS Involves relieving a building of heat, smoke and fire gases by natural or mechanical means. The firemen in small and medium departments must perform this job on their own initiative, while in the large department they are working under the direction of an officer.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	2	3	1	0	0	0	4	1	1	1
BASIC-GENERAL	22	8	1	7	22	9	0	9	10	2	0	1
IN-DEPTH	47	26	2	26	49	20	5	26	43	8	5	5

Statewide Advisory Committee recommendations

CAP 96 3 3DME : ENGR 29 3 3DME : F/M 68 3 2D3D : INSP 3 3 3 RE : A/O 0 0 D 1AN- : MECH 6 3 D 1A2D

TABLE 24. TACTICS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE METHOD TO CONFINE FIRES	76	71	66	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	98	94	95	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	62	48	44	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	89	84	70	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	10	9	0	H H L	3 3 0	5 4 0	4 4 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	18	5	5	H M L	3 3 3	5 2 2	3 3 4	1	1	12
UTILIZE METHOD TO EXTINGUISH FIRES	78	71	66	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	98	94	89	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	67	48	45	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	92	83	71	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	13	14	0	H H L	3 3 0	3 5 0	4 4 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	5	5	H M L	3 3 3	5 2 2	4 3 4	1	1	12
USE OVERHAUL METHODS	77	72	76	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	95	94	95	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	66	53	53	H H H	3 3 3	3 5 5	4 4 3	1	1	1
FIREMAN	91	83	85	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	12	2	0	H H L	3 3 0	5 3 0	4 4 0	1	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	5	H L L	3 0 3	4 0 2	3 0 4	1	0	12

* UTILIZE METHOD TO CONFINE FIRES Involves preventing a fire from spreading within an involved structure, or confining a fire to the smallest possible area within a structure. The firemen in small and medium departments must perform this job on their own initiative, while in the large department they are working under the direction of an officer.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	2	2	0	0	0	0	1	0	0	0
BASIC-GENERAL	19	7	1	6	22	9	1	8	12	4	0	1
IN-DEPTH	51	28	2	26	49	23	5	26	52	12	7	8

Statewide Advisory Committee recommendations

CAP 95 3 3DME : ENGR 46 3 3D4D : F/M 74 3 2D3D : INSP 3 3 3 RE : A/O 0 0 D 1AN- : MECH 7 3 D 1A2D

* UTILIZE METHOD TO EXTINGUISH FIRES Involves selecting and applying the proper type and quantity of extinguishing agent based upon the type and quantity of fuel involved by fire. The firemen in small and medium departments must perform this job on their own initiative, while in the large department they are working under the direction of an officer.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	0	0	0	0	5	0	0	0
BASIC-GENERAL	20	8	1	6	19	7	1	8	8	2	0	1
IN-DEPTH	55	29	6	31	51	24	5	23	52	6	2	8

Statewide Advisory Committee recommendations

CAP 91 3 3DME : ENGR 49 3 3DME : F/M 75 3 2D3D : INSP 4 3 3 RE : A/O 0 0 D 1AN- : MECH 8 3 D 1AN-

* UTILIZE OVERHAUL METHODS Involves determining by careful and systematic examination of fire premises that fires are completely extinguished, placing such premises in as safe a condition as possible, and providing means of safeguarding such premises from unlawful entry or thefts. Captains and firemen are predominantly involved in this task at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	2	3	2	1	0	1	0	0	0	0
BASIC-GENERAL	24	6	1	8	24	7	1	11	18	4	0	1
IN-DEPTH	46	25	2	26	43	19	6	22	58	3	1	5

Statewide Advisory Committee recommendations

CAP 95 3 3DME : ENGR 55 3 3DME : F/M 85 3 2D3D : INSP 2 3 D 2 ME : A/P 0 0 D 1AN- : MECH 4 3 D 1AN-

TABLE 24. TACTICS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
CONTROL TRAFFIC	44	35	35	H H H	3 3 3	5 5 4	3 3 3	1	1	1
CAPTAIN	52	28	14	H H M	3 3 3	5 5 1	4 3 3	1	1	1
ENGINEER	36	34	54	M H H	3 3 3	4 4 4	3 3 3	1	1	1
FIREMAN	53	44	39	H H H	3 3 3	5 5 4	3 3 3	1	1	1
INSPECTOR	13	5	0	H H L	3 3 0	5 5 0	4 2 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	5	0	H M L	3 3 0	3 4 0	3 3 0	1	1	0
OBTAIN ASSISTANCE	47	37	24	H H H	3 3 3	5 5 5	3 4 3	1	1	1
CAPTAIN	88	82	72	H M H	3 3 3	5 5 5	4 4 3	1	1	1
ENGINEER	46	34	22	M M H	3 3 3	5 5 4	3 3 3	1	1	1
FIREMAN	41	25	7	H H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	17	11	0	H H L	3 3 0	3 4 0	4 4 0	1	1	0
ALARM OPERATOR	0	26	15	L H H	0 3 3	0 4 4	0 4 4	0	1	1
MECHANIC	14	0	2	H L L	3 0 3	3 0 2	3 0 4	1	0	1
PLACE APPARATUS AND EQUIPMENT	48	51	34	H H H	3 3 3	5 5 5	4 4 3	1	1	1
CAPTAIN	92	89	84	H H H	3 3 3	5 5 5	4 4 3	1	1	1
ENGINEER	66	72	61	H H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	32	37	5	H H M	3 3 3	5 5 5	4 3 3	1	1	1
INSPECTOR	13	5	0	M H L	3 3 0	3 1 0	4 4 0	11234		0
ALARM OPERATOR	0	3	0	L H L	0 5 0	0 5 0	0 4 0	0	1	0
MECHANIC	18	5	4	H M L	3 3 3	5 4 5	4 3 4	1	1	12

• CONTROL TRAFFIC Usually a function of police agencies, but may be performed by fire service personnel. Requires controlling vehicular and pedestrian traffic at or near a fire or other incident in order to provide safety to the public and clear areas in which to maneuver fire apparatus and equipment. Captains and firemen in small departments are involved more often than are the other ranks. In the large department the engineer is involved because he remains with his apparatus and is "on the street."

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	11	1	0	0	10	0	0	0	24	0	0	0
BASIC-GENERAL	18	1	0	2	13	1	0	1	8	0	0	0
IN-DEPTH	13	9	1	8	12	5	0	6	0	0	0	0

Statewide Advisory Committee recommendations

CAP 24 3 JUNE : ENGR 49 3 JUNE : F/M 42 3 1A3D : INSP 2 3 D 1 H- : A/O 0 0 D 1AH- : MECH 3 3 D 1AH-

• OBTAIN ASSISTANCE Involves ordering or requesting additional manpower, fire apparatus, other equipment, technical advice, or any other assistance necessary to deal with a fire or incident. Requires knowing what assistance is available and where, when, and how it may be obtained. Seventy-five percent of the captains in all departments are required to obtain assistance. In the large departments, the battalion chief and assistant chief usually perform this task, depending upon the situation.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	1	3	3	0	0	0	0	0	0
BASIC-GENERAL	21	2	0	3	16	1	0	3	11	0	0	0
IN-DEPTH	17	10	1	10	17	6	2	6	11	3	1	0

Statewide Advisory Committee recommendations

CAP 75 3 JUNE : ENGR 87 3 2D3D : F/M 24 3 1A3D : INSP 4 3 D 3 HI : A/O 15 3 1A3D : MECH 3 3 D 1AH-

• PLACE APPARATUS AND EQUIPMENT Involves assigning apparatus and equipment to proper locations at the scene of a fire or incident in order to provide for effective utilization and achievement of objectives. Firemen in small and medium departments do this job either because they are "acting officers" or because the department does not have an engineer's rank.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	1	0	0	0	1	0	0	0
BASIC-GENERAL	18	2	1	4	18	5	1	3	12	0	0	0
IN-DEPTH	25	12	1	13	31	18	2	12	18	4	2	1

Statewide Advisory Committee recommendations

CAP 85 3 JUNE : ENGR 63 3 JUAD : F/M 13 3 1A3D : INSP 2 3 D 2 H- : A/O 1 0 D 1AH- : MECH 5 1 D 1AH-

TABLE 24. TACTICS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
RETURN UNNEEDED APPARATUS	35	31	18	H	H	H	3	3	3	5	4	2	3	3	3	1	1	1
CAPTAIN	89	76	59	H	H	H	3	3	3	5	4	5	4	3	3	1	1	1
ENGINEER	41	27	14	H	H	H	3	3	2	3	3	2	3	3	3	1	1	1
FIREMAN	19	20	4	H	H	M	3	3	3	5	5	4	3	3	3	1	1	1
INSPECTOR	15	11	0	H	H	L	3	3	0	3	4	0	4	4	0	1	1	0
ALARM OPERATOR	0	6	12	L	H	H	0	3	3	0	5	3	0	3	3	0	1	1
MECHANIC	14	5	0	H	M	L	3	3	0	4	2	0	3	3	0	1	1	0

* RETURN UNNEEDED APPARATUS Involves determining the quantity and type of apparatus which will be necessary to cope with a particular fire or incident and releasing all other apparatus responding to or at the scene of the incident. A greater percentage of personnel in small and medium departments act in this capacity than personnel in large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	2	4	3	0	0	1	0	0	0
BASIC-GENERAL	16	1	0	3	20	1	0	1	15	0	0	0
IN-DEPTH	15	5	1	7	7	3	0	4	2	2	0	0

Statewide Advisory Committee recommendations

CAP 68 3 3DME : ENGR 20 3 2DME : F/M 8 3 1A2D : INSP 3 3 D 2 N- : A/O 10 3 2AME : MECH 2 3 D 1AN-

TABLE 25. SPECIAL TYPE FIRES

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
EXTINGUISH COMMON CARRIER FIRES	66	59	76	H H H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	80	76	88	H H H	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	42	36	60	H H H	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	86	71	85	H H H	3 3 3	5 5 4	4 4 3	1 1 1
INSPECTOR	6	7	0	M H L	3 3 0	5 5 0	4 4 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	23	5	0	H M L	3 3 0	5 4 0	4 3 0	1 1 0
EXTINGUISH BRUSH AND GRASS FIRES	77	73	79	H H H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	86	82	87	H H H	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	62	45	61	H H H	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	96	92	91	H H H	3 3 3	5 5 4	4 4 3	1 1 1
INSPECTOR	12	12	0	H H L	3 3 0	5 5 0	4 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	23	5	5	H M L	3 3 3	5 4 5	4 3 4	1 1 12
EXTINGUISH FIRES IN PLACES OF PUBLIC ASSEMBLAGE	68	74	81	H M H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	80	81	87	H L L	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	54	46	65	M M H	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	84	94	93	H M H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	10	12	0	M L L	3 3 0	5 5 0	4 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	23	5	5	H M L	3 3 3	5 4 5	4 3 4	1 1 12

* EXTINGUISH COMMON CARRIER FIRES Common carrier fires are classified as those which involve railroad rolling stock and trucks and buses. Common carrier fire problems are compounded by potential hazard to life (passengers, crew men and drivers) and by the almost innumerable types and kinds of materials transported. Additional problems may occur due to response distances, limited water supplies and difficulty in gaining access to sites of off-highway incidents. Captains and firemen in all size departments are involved at a high rate of frequency. Engineers in large departments perform this assignment in greater percentages than engineers in small and medium-size departments. Mechanics in small departments are responsible as additional duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	2	1	0	0	4	0	0	0
BASIC-GENERAL	22	2	0	5	19	3	0	8	18	0	0	6
IN-DEPTH	38	17	1	18	37	17	4	21	54	18	5	2

Statewide Advisory Committee recommendations

CAP 85 3 3DME : ENGR 54 3 3DRE : F/M 83 3 1A3D : INSP 2 3 D 3 RE : A/O 0 0 D 1AN- : MECH 4 3 D 1A2D

* EXTINGUISH BRUSH AND GRASS FIRES Brush and grass fires vary from those which occur on vacant lots in cities and towns to those which involve thousands of acres in range lands and timber lands. Large fires of this type compare to military campaigns and require armies of men, fleets of various types of vehicle and sound organization and command techniques. Personnel in the rank of captain, engineer and fireman extinguish brush fires at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	1	0	0	0	4	2	0	0
BASIC-GENERAL	24	3	0	7	30	10	1	9	18	2	1	5
IN-DEPTH	50	14	1	16	43	17	4	21	55	3	1	3

Statewide Advisory Committee recommendations

CAP 87 3 3DME : ENGR 59 3 3D4D : F/M 92 3 1A3D : INSP 3 3 D 3 RE : A/O 0 0 D 1AN- : MECH 7 3 D 1AN-

* EXTINGUISH FIRES IN PLACES OF PUBLIC ASSEMBLAGE Fires in places of public assemblage involve problems similar to those which occur during fires in any structure, with one vital exception--the major emphasis must be placed upon sound search and rescue techniques and the prevention of panic. Medium size departments usually perform this function at a moderate rate of frequency, while small and large departments indicate a high frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	2	2	4	0	0	0	3	0	0	0
BASIC-GENERAL	14	5	0	5	26	10	1	13	17	2	0	0
IN-DEPTH	47	22	1	17	43	19	5	17	61	18	11	6

Statewide Advisory Committee recommendations

CAP 85 3 3DME : ENGR 61 3 3D4D : F/M 92 3 1A3D : INSP 3 3 D 3 RE : A/O 0 0 D 1AN- : MECH 7 3 D 1A2D

TABLE 25. SPECIAL TYPE FIRES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
EXTINGUISH FIRES IN HOSPITALS AND INSTITUTIONS	52	64	75	L L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	69	65	78	H L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	47	40	56	L M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	59	82	88	L L H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	4	12	0	M L L	3 3 0	4 5 0	4 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	5	5	H M L	3 3 3	5 4 5	4 3 4	1	1	12
EXTINGUISH UNDERGROUND FIRES	26	36	43	H L H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	30	32	37	H L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	20	21	50	H L H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	32	50	47	H L H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	8	7	0	H H L	3 3 0	5 5 0	4 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	5	0	H M L	3 3 0	5 2 0	4 3 0	1	1	0
EXTINGUISH SINGLE-STORY STRUCTURAL FIRES	77	75	84	M H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	86	87	86	H H H	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	62	46	65	M H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	97	93	98	M H H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	12	18	0	H H L	3 3 0	5 5 0	3 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	18	5	0	H M L	3 3 0	5 4 0	4 3 0	1	1	0

* EXTINGUISH FIRES IN HOSPITALS AND INSTITUTIONS Fires in these occupancies may involve the removal of persons who are mentally or physically incapacitated or who are restrained in some manner. A greater percentage of personnel in large departments is involved in this type of fire; however, the rate of frequency is low.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	0	1	0	0	0	3	0	0	0
BASIC-GENERAL	12	4	0	2	20	8	0	10	12	7	0	0
IN-DEPTH	34	15	2	10	43	21	5	23	52	4	1	4

Statewide Advisory Committee recommendations

CAP 75 3 3DME : ENGR 53 3 3D4D : F/M 83 3 1A3D : INSP 2 3 3 ME : A/O 0 0 D 1AN- : MECH 5 3 D 1AN-

* EXTINGUISH UNDERGROUND FIRES This classification includes fires in mines, tunnels, subways, vaults, peat bogs, sawdust pits, and cut-and-fill waste disposal sites. Problems may include limited water supplies, lack of access, difficult search and ventilation operations and extreme hazards to fire fighting personnel. The relatively large number of responses by firemen in medium departments and engineers in large departments indicate that the response to this item was made primarily by the men who use the hose lines or operate the pumps. Medium departments indicate a low rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	4	0	0	0	1	0	0	0
BASIC-GENERAL	6	1	0	1	11	5	0	4	11	0	0	0
IN-DEPTH	16	5	1	9	21	12	4	12	31	2	0	3

Statewide Advisory Committee recommendations

CAP 36 3 3DME : ENGR 42 3 3D4D : F/M 45 3 1A3D : INSP 2 3 D 3 RE : A/O 0 0 D 1AN- : MECH 1 3 D 1AN-

* EXTINGUISH SINGLE-STORY STRUCTURAL FIRES Single story structures vary in size from small dwellings or outbuildings to factories, warehouses and piers whose areas may be measured in acres rather than square feet. Occupancies, types of construction, fire protection features, and weather and other conditions are extremely variable and will determine procedures to be used. Approximately the same percentages of personnel in departments of all sizes are involved in this type of fire. The small departments, however, indicate a moderate rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	4	4	0	4	3	0	0	0
BASIC-GENERAL	20	4	3	7	15	6	1	9	16	2	0	1
IN-DEPTH	55	29	2	22	53	26	4	24	64	17	12	7

Statewide Advisory Committee recommendations

CAP 86 3 3DME : ENGR 62 3 3D4D : F/M 97 3 1A3D : INSP 4 3 D 3 RE : A/O 0 0 D 1AN- : MECH 3 3 D 1AN-

TABLE 25. SPECIAL TYPE FIRES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
EXTINGUISH MULTIPLE-STORY STRUCTURAL FIRES	70	71	81	H H H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	82	78	81	H L H	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	59	46	62	L H M	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	85	90	96	L H H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	8	15	0	H H L	3 3 0	5 4 0	4 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	18	5	5	H M L	3 3 3	5 4 5	4 3 4	1 1 12
EXTINGUISH BASEMENT FIRES	57	55	66	L L H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	62	60	46	H L L	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	43	39	55	L M H	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	73	68	86	L L H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	12	12	0	H L L	3 3 0	5 5 0	3 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	9	0	0	H L L	3 0 0	5 0 0	4 0 0	12 0 0
EXTINGUISH PETROLEUM FIRES	61	67	75	L M L	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	73	67	80	L L L	3 3 3	5 5 5	4 4 4	1 1 1
ENGINEER	48	44	62	L M H	3 3 3	5 5 5	4 4 4	1 1 1
FIREMAN	75	86	85	L L H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	10	7	0	L M L	3 3 0	5 5 0	3 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	18	0	4	H L L	3 0 3	5 0 5	4 0 4	1 0 12

* EXTINGUISH MULTIPLE-STORY STRUCTURAL FIRES Problems encountered at these fires are similar to those encountered at single story structural fires. However, limited access to upper floors, time necessary to get manpower and equipment into position, ventilation difficulties and high concentrations of people and values must also be considered. All departments are involved in this operation at a high frequency rate.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	1	0	0	0	1	0	0	0
BASIC-GENERAL	14	3	0	4	19	10	1	12	18	2	0	1
IN-DEPTH	52	29	6	22	47	20	4	23	61	16	11	6

Statewide Advisory Committee recommendations

CAP 81 3 3D4D : ENGR 60 3 3D4D : F/M 94 3 2D3D : INSP 3 3 D 3DRE : A/O 0 0 D 1AN- : MECH 7 3 D 1A2-

* EXTINGUISH BASEMENT FIRES Basement fires are difficult to locate, to gain access to, and to ventilate. The hazard of a basement fire's extending upward within the building may be extreme. Hazards to fire fighting personnel are a major consideration. Small and medium-size departments operate at a low frequency rate while large departments extinguish basement fires at a high rate.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	5	4	0	3	0	0	0	0
BASIC-GENERAL	12	5	1	5	12	3	1	5	19	0	0	0
IN-DEPTH	40	18	3	18	35	24	5	20	46	15	11	5

Statewide Advisory Committee recommendations

CAP 50 3 3D4D : ENGR 52 3 3DME : F/M 82 3 2D3D : INSP 3 3 D 3DRE : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* EXTINGUISH PETROLEUM FIRES Petroleum fires are classified as those involving flammable and combustible liquids and gases in production facilities in refineries, in mixing and handling plants, in transport by rail, truck, ship, and pipeline, in storage, in tanks, drums and cylinders, and in use in numerous types of occupancies. Small, medium, and large departments extinguish petroleum fires at a low to moderate rate of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	1	1	0	1	3	1	0	0
BASIC-GENERAL	11	5	0	5	21	8	1	12	13	1	0	1
IN-DEPTH	44	23	4	23	42	27	6	24	59	6	3	7

Statewide Advisory Committee recommendations

CAP 77 3 4DME : ENGR 58 3 3DME : F/M 84 3 2D3D : INSP 2 3 D 3DRE : A/O 0 0 D 1AN- : MECH 5 3 D 1A2-

TABLE 25. SPECIAL TYPE FIRES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
EXTINGUISH LIQUEFIED PETROLEUM FIRES	52	58	72	L L H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	67	63	75	L L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	47	40	58	L M H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	60	72	83	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	6	7	0	H M L	3 3 0	5 5 0	3 3 0	14	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	5	0	H M L	3 3 0	5 4 0	4 3 0	1	1	0
EXTINGUISH FIRES IN ELECTRICAL EQUIPMENT	69	73	80	M M H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	80	84	87	H M M	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	50	44	65	M H H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	89	91	90	H M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	10	12	0	H H L	3 3 0	5 5 0	3 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	5	4	H M L	3 3 3	5 4 5	4 3 4	1	1	12
EXTINGUISH CHEMICAL FIRES	55	60	75	L L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	66	61	84	L L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	39	39	58	L L H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	71	77	85	L M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	4	2	0	H L L	3 3 0	5 4 0	3 3 0	1	12	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	0	0	H L L	3 0 0	5 0 0	4 0 0	1	0	0

* EXTINGUISH LIQUEFIED PETROLEUM FIRES This job should be titled "liquefied petroleum gas fires," which involve primarily butane and propane. Fires involving these materials occur under conditions similar to those described under "Extinguish Petroleum Fires." These substances are stored and transported as liquids under moderate pressures, become gaseous under atmospheric pressure, and are heavier than air. Small and medium departments are involved at a low rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	1	1	0	1	1	0	0	0
BASIC-GENERAL	11	4	0	5	17	8	0	10	15	2	0	1
IN-DEPTH	36	21	2	18	34	25	7	24	55	5	2	7

Statewide Advisory Committee recommendations

CAP 72 3 4DME : ENGR 55 3 3D4D : F/M 78 3 2D3D : INSP 2 3 D 3DRE : A/O 0 0 D 1AN- : MECH 0 3 D 1A2-

* EXTINGUISH FIRES IN ELECTRICAL EQUIPMENT Such fires involve ordinary combustible materials, plastics and flammable liquids in close proximity to electricity, and must be extinguished with nonconducting extinguishing agents. Large departments are involved at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	1	1	0	0	0	0	3	0	0	0
BASIC-GENERAL	20	5	0	6	25	10	1	10	22	2	0	0
IN-DEPTH	43	20	3	23	45	28	7	25	54	15	2	8

Statewide Advisory Committee recommendations

CAP 86 3 3D4D : ENGR 60 3 3D4D : F/M 90 3 2D3D : INSP 3 3 D 3DRE : A/O 0 0 L 2DME : MECH 5 3 D 1A2-

* EXTINGUISH CHEMICAL FIRES Such fires involve materials which, in addition their flammability, may produce health hazards and/or may react violently in the presence of heat, air, water, or other materials. Highly specialized techniques, equipment and extinguishing agents may be required. There is generally a low rate of frequency for all size departments in this type of fire.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	6	4	0	5	1	0	0	0
BASIC-GENERAL	12	5	0	4	13	7	1	4	20	2	0	1
IN-DEPTH	37	21	3	17	37	25	7	21	52	17	17	6

Statewide Advisory Committee recommendations

CAP 78 3 4DME : ENGR 53 3 3D4D : F/M 82 3 2D3D : INSP 1 3 3DRE : A/O 0 0 D 1AN- : MECH 1 0 D 1A2-

TABLE 25. SPECIAL TYPE FIRES CONTINUED

	PEN			FRQ	T-K	N-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
EXTINGUISH FIRES IN AMMUNITION DUMPS	5	5	10	H H H	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	9	2	0	H H L	3 3 0	4 3 0	4 4 0	11	23	4 0
ENGINEER	1	0	15	M L H	2 0 3	3 0 5	4 0 4	1	0	1
FIREMAN	7	8	13	H H H	3 3 3	5 5 5	4 4 4	12	1	1
INSPECTOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	5	0	L M L	0 3 0	0 4 0	0 3 0	0	1	0
EXTINGUISH FIRES IN AIRCRAFT	26	29	27	H L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	33	24	36	H M L	3 3 3	5 5 5	3 4 4	1	1	1
ENGINEER	20	19	28	H L L	3 3 3	5 5 5	4 4 3	1	1	1
FIREMAN	32	39	26	H L L	3 3 3	5 5 5	4 4 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	5 0 0	3 0 0	1	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	0	0	H L L	4 0 0	5 0 0	4 0 0	1	0	0
EXTINGUISH MARINE FIRES	7	17	34	L L M	3 3 3	5 5 5	4 4 3	1	1	1
CAPTAIN	13	17	28	L L M	3 3 3	5 5 5	3 4 4	1	1	1
ENGINEER	4	13	25	L M L	3 3 3	5 5 5	4 4 3	1	1	1
FIREMAN	7	22	43	H L M	3 3 3	5 5 5	4 4 3	1	1	1
INSPECTOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	L L L	3 0 0	4 0 0	3 0 0	1	0	0

* EXTINGUISH FIRES IN AMMUNITION DUMPS Ammunition dumps are limited to military and manufacturing installations and are primarily outside storage facilities in remote locations. Only 12 percent of the firemen and engineers perform this assignment, and at a high rate of frequency, indicating that a specialty in the occupation might exist.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	0	0	0	0	1	0	0	0
BASIC-GENERAL	1	1	0	1	0	0	0	0	4	0	0	0
IN-DEPTH	3	2	0	2	4	3	2	3	5	1	0	3

Statewide Advisory Committee recommendations

GAP 1 3 JOAD : ENGR 12 2 JOME : F/M 12 3 ADJD : INSP 0 0 D JOME : A/D 0 0 D 1AR- : MECH 1 0 D 1AR-

* EXTINGUISH FIRES IN AIRCRAFT Aircraft fires may occur at airport facilities or at other locations. Aircraft fires which occur at airports may or may not be attributed to crashes. Off-airport fires always involve crashing of aircraft. Problems may include rescue, limited water supply, difficult access, large quantities of fuel, combustible metals used in aircraft construction, and, where military aircraft are concerned, may also involve live ammunition and conventional and nuclear explosives. Less than 30 percent of the personnel in departments of all sizes are involved in aircraft fires. Small departments indicate a high rate of frequency for this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	2	0	0	2	1	0	1	1	0	0	0
BASIC-GENERAL	6	1	0	4	5	2	0	1	10	0	0	0
IN-DEPTH	18	9	1	8	22	12	4	14	16	3	1	5

Statewide Advisory Committee recommendations

GAP 34 3 JOAD : ENGR 26 3 JOME : F/M 28 3 ADJD : INSP 1 0 D JOME : A/D 0 0 D 1AR- : MECH 1 0 D 1AR-

* EXTINGUISH MARINE FIRES These fires may vary in complexity from simple ones involving small boats to extremely difficult ones involving large passenger liners, freighters, tankers and military vessels. This is a specialized job. It is done mostly by fire departments within large cities, and is more a concern of the large department than of other size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	1	0	0	1	1	0	0	0
BASIC-GENERAL	2	1	0	0	5	1	0	1	8	0	0	1
IN-DEPTH	5	1	0	1	10	6	1	1	25	4	1	2

Statewide Advisory Committee recommendations

GAP 25 3 JOAD : ENGR 21 3 JOME : F/M 25 3 1AJD : INSP 0 0 JOME : A/D 0 0 D 1AR- : MECH 1 0 D 1AR-

TABLE 25. SPECIAL TYPE FIRES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
EXTINGUISH RADIOACTIVE MATERIAL FIRES	19	25	24	H L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	18	31	35	H L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	16	18	27	L L L	3 3 3	3 5 5	4 4 4	1	1	1
FIREMAN	24	29	20	H L L	3 3 3	5 5 5	4 4 3	1	1	1
INSPECTOR	2	0	0	H L L	3 0 0	3 0 0	3 0 0	14	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	L L L	3 0 0	4 0 0	3 0 0	1	0	0
EXTINGUISH CRYOGENIC MATERIAL FIRES	19	25	30	H L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	28	29	33	H L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	12	20	18	H L H	3 3 3	4 5 5	4 4 4	1	1	1
FIREMAN	23	30	36	H L L	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
EXTINGUISH PYROPHORIC MATERIAL FIRES	23	29	36	H L L	3 3 3	5 5 5	4 4 4	1	1	1
CAPTAIN	32	36	37	H L L	3 3 3	5 5 5	4 4 4	1	1	1
ENGINEER	21	18	28	H L H	3 3 3	5 5 5	4 4 4	1	1	1
FIREMAN	26	36	43	H L H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	2	0	0	H L L	3 0 0	3 0 0	3 0 0	14	0	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

* EXTINGUISH RADIOACTIVE MATERIAL FIRES Such fires pose serious health hazard potentials, and require use of special monitoring and measuring devices, as well as extreme precautions during and after their occurrence. No more than 32 percent of all personnel is involved in this type of fire. Small departments indicate a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	1	0	0	0	1	0	0	0
BASIC-GENERAL	3	1	0	2	5	1	0	4	7	0	0	0
IN-DEPTH	13	7	1	10	17	6	2	7	15	4	1	5

Statewide Advisory Committee recommendations

CAP 32 3 3D4D : ENGR 24 3 3DME : F/M 22 3 2D3D : INSP 0 0 3DRE : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* EXTINGUISH CRYOGENIC MATERIAL FIRES The term, cryogenics, indicates certain gases which are liquefied at temperatures approaching absolute zero. Hydrogen, nitrogen and oxygen are produced, transported and utilized in increasing quantities as cryogenics. Hydrogen is extremely flammable, nitrogen and oxygen are non-flammable, but oxygen is a strong supporter of combustion. Personnel hazards may be extreme. Thirty-three percent or less of all personnel is involved in this type of fire. Small departments indicate a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	0	1	0	0	0	1	0	0	0
BASIC-GENERAL	4	2	1	3	8	5	1	2	5	0	0	0
IN-DEPTH	11	8	1	5	16	8	5	8	22	4	1	2

Statewide Advisory Committee recommendations

CAP 32 3 3D4D : ENGR 18 3 3DME : F/M 33 3 2D3D : INSP 0 0 3DRE : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* EXTINGUISH PYROPHORIC MATERIAL FIRES Pyrophoric materials ignite spontaneously when in contact with air and react violently in the presence of water and certain other extinguishing agents. Special knowledge and procedures are necessary in order to deal safely and effectively with fires in such materials. Forty percent or less of all personnel are involved in this type of fire. Small departments indicate a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	3	1	1	2	1	0	0	0
BASIC-GENERAL	5	3	1	3	6	4	0	2	8	0	1	2
IN-DEPTH	16	8	2	10	20	10	5	9	26	4	1	4

Statewide Advisory Committee recommendations

CAP 36 3 3D4D : ENGR 26 3 3DME : F/M 40 3 2D3D : INSP 0 0 D 3DRE : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 26. DEMOLITION

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
USE EXPLOSIVES	1	0	0	H	L	L	3	0	0	5	0	0	4	0	0	124	0	0
CAPTAIN	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEER	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
FIREMAN	3	0	0	H	L	L	3	0	0	5	0	0	4	0	0	124	0	0
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
USE MECHANICAL DEVICES	11	16	11	H	H	H	3	3	3	5	5	5	4	3	4	1	1	1
CAPTAIN	15	15	23	L	H	M	3	3	3	3	5	5	4	4	4	1	1	1
ENGINEER	17	9	8	H	H	H	3	3	3	3	3	5	3	3	4	1	1	1
FIREMAN	9	21	9	H	H	H	3	3	3	5	5	5	4	4	4	1	1	1
INSPECTOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	11	0	H	H	L	5	3	0	5	2	0	4	3	0	1	1	0

* USE EXPLOSIVES The use of explosives for extinguishing fires is limited primarily to fires involving oil and gas wells. Fire service personnel rarely, if ever, extinguish such fires with explosives. Where necessary, civilian experts in this field are called in. The use of explosives to control structure fires of conflagration proportions has been relatively unsuccessful and is not recommended by most fire authorities. This is practically never done in fire fighting. Only 3 percent of the firemen in small departments perform this task and have received in-depth training from outside the department.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	0	0	0	0	0	0	0	0	0	0	0	0
IN-DEPTH	1	1	0	1	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 0 0 D 1B2B : ENGR 0 0 D 1BME : F/M 1 0 D 1B2B : INSP 0 0 D 2DME : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* USE MECHANICAL DEVICES Mechanical devices, such as bulldozers, cranes, mobile wreckers and the like, are sometimes used to demolish burned out structures in order to reach deep seated fires. Approximately 10 percent of the firemen and engineers perform this task, but at a high rate of frequency, indicating a specialty assignment.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	4	0	0	0	0	0	0	0
BASIC-GENERAL	3	1	0	1	6	3	0	1	1	0	0	0
IN-DEPTH	6	1	0	2	6	3	0	4	9	0	0	3

Statewide Advisory Committee recommendations

CAP 21 3 L 3DME : ENGR 9 3 2DME : F/M 10 3 2D3D : INSP 0 0 D 2DME : A/O 0 0 D 1AN- : MECH 3 3 D 1AN-

TABLE 27. MAJOR DISASTER PLAN

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
USE DISASTER PLANS	19	27	37	H	L	L	3	3	3	5	5	5	4	3	4	1	1	1
CAPTAIN	43	34	62	H	L	L	3	3	3	5	5	5	4	3	4	1	1	1
ENGINEER	16	13	45	L	H	L	3	3	3	5	5	3	3	3	3	1	1	1
FIREMAN	16	29	23	H	L	L	3	3	3	5	3	5	4	2	4	1	1	1
INSPECTOR	8	15	41	H	L	L	3	3	3	3	3	5	3	4	4	14	1	1
ALARM OPERATOR	10	50	71	H	L	H	3	3	3	5	5	5	4	3	3	14	1	1
MECHANIC	0	0	6	L	L	H	0	0	4	0	0	5	0	0	4	0	0	1

* USE DISASTER PLANS Major disaster plans are designed to provide rescue, fire control and related services during extreme disasters, such as conflagrations, floods, earthquakes, civil disturbances and the like. Use involves knowing the plan, deciding when activation of the plan is necessary, and supervising activities in order to achieve results from the plan. Alarm operators and captains in large and medium departments are mostly involved in the use of disaster plans while in small departments it is primarily the captain's responsibility.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	13	0	0	0	2	0	0	0
BASIC-GENERAL	5	1	0	2	4	1	0	1	8	0	0	0
IN-DEPTH	9	2	1	3	10	2	0	3	27	1	0	3

Statewide Advisory Committee recommendations

CAP 56 3 3D4D : ENGR 37 3 2D3D : F/M 23 3 L 1D2D : INSP 33 3 2D3D : A/O 60 3 2D3D : MECH 5 0 D 1AN-

TABLE 28. FOLDING AND SPREADING SALVAGE COVERS

	MEN			FRQ	T-K	M-S	PET	W-D		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
FOLD, CARRY, SPREAD, AND HANG COVERS	65	72	74	M M M	3 3 3	3 5 5	3 4 4	1	1	1
CAPTAIN	55	51	53	M M M	3 3 3	5 5 3	3 4 4	1	1	1
ENGINEER	59	70	66	M M M	3 3 3	3 3 3	4 4 3	1	1	1
FIREMAN	85	92	93	M M H	3 3 3	3 5 5	4 4 4	1	1	1
INSPECTOR	4	8	0	M L L	3 3 0	5 5 0	4 3 0	14	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	2	H L L	3 0 3	3 0 5	3 0 4	1	0	12
USE COVERS AS IMPROVISED EQUIPMENT	64	64	70	M L H	3 3 3	5 5 5	3 4 4	1	1	1
CAPTAIN	52	56	74	L L M	3 3 3	5 5 5	3 4 4	1	1	1
ENGINEER	60	65	58	M M L	3 3 3	3 5 5	3 4 3	1	1	1
FIREMAN	84	78	80	M M H	3 3 3	5 5 5	4 4 4	1	1	1
INSPECTOR	4	5	0	M L L	3 3 0	5 5 0	4 3 0	14	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
COVER ROOF OPENINGS	60	52	72	L L H	3 3 3	3 5 5	3 4 3	1	1	1
CAPTAIN	50	41	71	L L L	3 3 3	5 3 5	3 4 4	1	1	1
ENGINEER	47	51	52	L L L	3 3 3	3 5 5	3 4 3	1	1	1
FIREMAN	81	65	88	H M H	3 3 3	3 5 4	3 4 3	1	1	1
INSPECTOR	4	11	0	M L L	3 3 0	5 3 0	4 3 0	1	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	H L L	3 0 0	2 0 0	3 0 0	1	0	0

* FOLD, CARRY, SPREAD, AND HANG COVERS Involves knowledge and understanding of method of inspecting and cleaning covers, and training in method of folding and carrying covers as prescribed by the department. Intensive training is required in hanging covers from walls by various methods and means, also in the various methods of spreading covers, in order to develop teamwork. Firemen in all size departments are extensively involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	2	10	0	0	3	5	0	0	2
BASIC-GENERAL	26	2	0	12	27	4	1	16	14	0	0	1
IN-DEPTH	33	12	2	17	35	11	3	15	55	1	0	6

Statewide Advisory Committee recommendations

CAP 53 3 3DRE : ENGR 66 3 2D3D : F/M 92 3 2D3D : INSP 2 3 D 2DN- : A/O 0 0 D 1AN- : MECH 2 3 D 1AN-

* USE COVERS AS IMPROVISED EQUIPMENT Involves a variety of different jobs in which training should be given, including the construction of ladder drains, drains to window drains, stairway drains, catch basins, drip tubs, improvised sump, and catch-all. Firemen in all size departments are extensively involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	7	0	0	2	3	0	0	0
BASIC-GENERAL	23	2	0	10	26	3	0	16	12	0	0	2
IN-DEPTH	35	15	2	19	32	7	2	16	56	0	0	6

Statewide Advisory Committee recommendations

CAP 69 3 3DRE : ENGR 59 3 3DME : F/M 80 3 1D3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* COVER ROOF OPENINGS Involves making temporary roof repairs correctly for various types of roofs with salvage covers, tar paper, plastic sheeting, etc. Firemen in all size departments are involved extensively in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	1	5	0	0	2	5	0	0	0
BASIC-GENERAL	27	4	0	7	21	2	0	5	23	0	0	6
IN-DEPTH	26	11	1	12	27	8	2	11	45	2	0	1

Statewide Advisory Committee recommendations

CAP 64 3 3DRE : ENGR 51 3 4DRE : F/M 84 3 2D3D : INSP 2 3 D 2DN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 29. PROTECTICN OF BUILDING CONTENTS

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
PROTECT FLOOR AND WALL COVERINGS	65	63	75	M M H	3 3 3	5 5 5	3 4 4	1 1 1
CAPTAIN	61	56	76	M M M	3 3 3	5 5 5	3 4 4	1 1 1
ENGINEER	46	47	56	M M M	3 3 3	3 4 5	3 4 3	1 1 1
FIREMAN	89	81	89	M M H	3 3 3	3 5 5	4 4 3	1 1 1
INSPECTOR	2	11	0	M L L	3 3 0	5 5 0	4 3 0	14 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1 0 0
PROTECT FURNISHINGS, CHATTELS, MACHINERY, AND MERCHANDISE	67	65	82	M M H	3 3 3	5 5 5	4 4 4	1 1 1
CAPTAIN	64	61	76	M M H	3 3 3	5 5 5	3 4 4	1 1 1
ENGINEER	48	50	55	M M L	3 3 3	5 4 5	4 3 3	1 1 1
FIREMAN	92	83	100	M M H	3 3 3	5 5 5	4 4 4	1 1 1
INSPECTOR	2	11	0	M M L	3 3 0	5 5 0	4 3 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1 0 0

• PROTECT FLOOR AND WALL COVERINGS Involves placing covers in such a manner as to protect the floors or wall coverings from as much damage as possible, and the removal of water from attics or on floors above. This is a primary responsibility of the firemen. In large departments it is performed at a high rate of frequency while in small and medium departments it is accomplished at a moderate rate.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	2	0	2	5	0	0	2	2	1	1	1
BASIC-GENERAL	22	2	0	10	24	4	1	14	20	0	0	4
IN-DEPTH	31	13	2	17	33	14	4	13	52	3	0	2

Statewide Advisory Committee recommendations

CAP 71 3 3DRE : ENGR 53 3 4DRE : F/M 88 3 2D3D : INSP 2 3 D 2DN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

• PROTECT FURNISHINGS, CHATTELS, MACHINERY, AND MERCHANDISE Involves grouping, piling and covering furnishings, fixtures, chattels, machinery and merchandise. It involves knowledge of comparative salvage values of various types of furnishings, machinery, chattels, merchandise, and necessity for speed and unified effort. High percentages of firemen perform this task, ranging from 83 percent in medium departments to 100 percent in large. In the large departments, both firemen and captains do the job at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	2	0	3	6	0	0	2	2	1	1	1
BASIC-GENERAL	23	4	0	11	26	6	0	13	22	1	0	4
IN-DEPTH	32	12	2	18	34	12	4	13	56	2	0	2

Statewide Advisory Committee recommendations

CAP 73 3 3DRE : ENGR 52 3 4DRE : F/M 97 3 1D3D : INSP 2 3 D 2DN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 30. CONTROL OF WATER

	PEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
OPERATE SPRINKLER SYSTEMS	40	42	31	L	M	M	3	3	3	3	5	5	4	4	4	1	1	1
CAPTAIN	48	53	21	L	L	M	3	3	3	5	5	5	4	4	4	1	1	1
ENGINEER	44	41	36	L	L	H	3	3	3	3	5	5	3	4	4	1	1	1
FIREMAN	41	43	36	H	M	M	3	3	3	5	5	5	3	4	4	1	1	1
INSPECTOR	33	32	6	M	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	9	5	0	M	M	L	3	3	0	5	2	0	4	3	0	12	1	0
OPERATE SPRINKLER HEAD SHUT-OFF AND WRENCHES AND RESTORE SPRINKLER SYSTEM TO SERVICE	47	63	55	L	M	L	3	3	3	5	5	5	3	4	3	1	1	1
CAPTAIN	52	65	47	L	L	L	3	3	3	5	5	5	3	4	3	1	1	1
ENGINEER	45	39	42	L	L	H	3	3	3	3	5	5	3	4	3	1	1	1
FIREMAN	53	80	69	L	M	H	3	3	3	5	5	5	3	4	4	1	1	1
INSPECTOR	23	15	0	M	M	L	3	3	0	3	3	0	3	4	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	5	0	M	M	L	3	3	0	4	2	0	4	3	0	1	1	0

* OPERATE SPRINKLER SYSTEMS Involves an understanding of sprinkler systems and the types in use. It also involves knowledge and training in methods of operation and control in order to understand that they may be temporarily controlled without shutting down floor or main riser valves. Small and medium departments train on "mock" sprinkler systems more often than do the large departments. The inspectors in small and medium departments test the sprinkler systems. Across the board, operation is assigned to less than half the personnel in departments of all sizes.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	1	1	1	3	0	0	2	6	0	0	1
BASIC-GENERAL	12	5	0	4	9	2	0	2	4	0	1	1
IN-DEPTH	20	7	1	9	31	12	4	17	20	16	0	0

Statewide Advisory Committee recommendations
CAP 29 3 3DRE : EMGR 38 3 3DMD : F/M 37 3 1D3D : INSP 13 3 3DME : A/O 0 0 D 1AN- : MECH 2 3 D 1AN-

* OPERATE SPRINKLER HEAD SHUT-OFF AND WRENCHES AND RESTORE SPRINKLER SYSTEM TO SERVICE Involves controlling water flow from sprinkler head by use of a shut-off or wedge; closing the control valve of the area involved and draining that part of the system. When system is drained, the fused sprinkler head is replaced with one of the same fusing temperature and the system is restored to service. This is primarily a responsibility of firemen. Only in large departments do the firemen perform the job at a high rate of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	8	2	0	3	0	0	0	0
BASIC-GENERAL	18	6	0	4	19	3	0	6	10	0	1	3
IN-DEPTH	21	8	2	9	35	13	4	20	45	27	9	0

Statewide Advisory Committee recommendations
CAP 50 3 3DRE : EMGR 42 3 3DME : F/M 68 3 2D3D : INSP 5 3 3DME : A/O 0 0 D 1AN- : MECH 3 3 D 1AN-

TABLE 31. OVERHAULING PREMISES AND CONTROLLING UTILITIES

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
OPERATE SWEEPING AND DRYING TOOLS	59	54	68	M M H	3 3 3	5 5 5	3 3 3	1	1	1
CAPTAIN	41	28	36	H M H	3 3 3	5 5 3	3 4 3	1	1	1
ENGINEER	43	43	51	M M H	3 3 3	3 3 5	3 3 3	1	1	1
FIREMAN	84	76	95	M H H	3 3 3	5 5 5	3 3 3	1	1	1
INSPECTOR	2	7	0	M H L	3 3 0	5 4 0	4 4 0	14	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	0	0	H L L	3 0 0	4 0 0	3 0 0	1	0	0
OPERATE DRAINING DEVICES	34	39	57	H M H	3 3 3	5 5 5	4 3 3	1	1	1
CAPTAIN	28	18	32	H L H	3 3 3	5 5 4	4 4 4	1	1	1
ENGINEER	24	30	46	L M M	3 3 3	3 5 5	4 3 3	1	1	1
FIREMAN	47	56	77	H M H	3 3 3	5 5 5	4 3 3	1	1	1
INSPECTOR	2	2	0	L M L	3 3 0	5 3 0	4 4 0	14	124	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
REMOVE WATER	61	67	69	M M H	3 3 3	5 5 5	3 4 3	1	1	1
CAPTAIN	45	35	36	M L H	3 3 3	5 5 4	3 3 4	1	1	1
ENGINEER	52	52	53	M M H	3 3 3	3 5 5	3 4 3	1	1	1
FIREMAN	84	95	96	M M H	3 3 3	5 5 4	3 4 3	1	1	1
INSPECTOR	4	7	0	H H L	3 3 0	5 4 0	3 4 0	1	1	0
ALARM OPERATOR	0	0	4	L L H	0 0 3	0 0 3	0 0 3	0	0	1
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1	0	0

* OPERATE SWEEPING AND DRYING TOOLS This involves the use of various tools and pieces of equipment for the removal of water from surfaces of floors and floor covering, also from ceilings and attics. This is primarily a responsibility of firemen, in proportions ranging from 76 percent in medium departments to 95 percent in large. They perform at a high rate of frequency in medium and large departments. Captains and engineers in large departments also perform this task at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	11	0	0	0	9	1	0	4	4	0	0	0
BASIC-GENERAL	22	3	0	4	24	2	0	3	31	0	0	5
IN-DEPTH	25	12	0	10	20	5	1	4	33	2	0	1

Statewide Advisory Committee recommendations

CAP 36 3 3DRE : ENGR 49 3 3DRE : F/M 91 3 2D3D : INSP 1 3 D 2BN- : A/O 0 0 D 1AN- : MECH 2 0 D 1AN-

* OPERATE DRAINING DEVICES Requires laying hose lines and setting up and connecting them to siphons or ejectors. It also involves activating sump pumps and the use of portable pumps. The assignment is principally carried out by firemen, who perform at high rates of frequency in small and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	5	0	0	2	2	0	0	0
BASIC-GENERAL	10	2	0	3	16	2	1	8	26	0	0	6
IN-DEPTH	18	8	0	5	16	5	1	6	28	0	0	0

Statewide Advisory Committee recommendations

CAP 30 3 3DRE : ENGR 41 3 3DRE : F/M 70 3 2D3D : INSP 1 3 D 2BN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* REMOVE WATER Involves locating building drains and scuppers. Also involves breaching walls, making chutes with salvage covers down stairways or to windows; the removal of toilet bowls in order to use sewer system; the use of sawdust to divert water into elevator shafts so it can be pumped out. Removal should be done with the least amount of damage, with a minimum of time and effort. Captains, engineers and firemen in large departments perform this task at high rates of frequency. The task falls principally on the fireman, however, and is carried out by 84 percent in small departments, 95 percent in medium, and 96 in large.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	13	0	0	0	12	3	0	5	3	0	0	0
BASIC-GENERAL	26	3	0	6	21	3	1	7	30	0	0	5
IN-DEPTH	21	7	0	7	31	8	1	8	37	2	0	1

Statewide Advisory Committee recommendations

CAP 37 3 3DRE : ENGR 53 3 3DRE : F/M 94 3 2D3D : INSP 2 3 D 2BN- : A/O 3 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 31. OVERHAULING PREMISES AND CONTROLLING UTILITIES CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
CONTROL PUBLIC SERVICE UTILITIES	22	36	44	H H H	3 3 3	5 5 4	3 3 3	1 1 1
CAPTAIN	35	46	27	H H H	3 3 3	5 5 4	3 3 4	1 1 1
ENGINEER	22	36	46	M H H	3 3 3	3 4 5	3 3 3	1 1 1
FIREMAN	23	39	55	H M H	3 3 3	3 5 4	3 3 3	1 1 1
INSPECTOR	4	5	0	L H L	3 2 0	5 5 0	4 2 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1 0 0
REMOVE DEBRIS	60	66	71	H H H	3 3 3	3 5 3	3 3 3	1 1 1
CAPTAIN	40	49	44	H H H	3 3 3	3 5 3	3 3 4	1 1 1
ENGINEER	45	49	53	M H H	3 3 3	3 5 5	3 4 3	1 1 1
FIREMAN	87	88	96	H H H	3 3 3	5 5 4	3 3 3	1 1 1
INSPECTOR	4	7	0	H H L	3 3 0	5 3 0	4 4 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1 0 0
REMOVE HAZARDS	52	60	65	M M H	3 3 3	3 5 4	3 3 3	1 1 1
CAPTAIN	40	49	44	M H H	3 3 3	3 5 3	3 3 4	1 1 1
ENGINEER	39	43	45	M M H	3 3 3	3 5 5	3 4 3	1 1 1
FIREMAN	74	80	88	H M H	3 3 3	3 5 4	3 3 3	1 1 1
INSPECTOR	4	12	0	H H L	3 3 0	5 3 0	3 2 0	1 1 0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	H L L	3 0 0	4 0 0	3 0 0	1 0 0

* CONTROL PUBLIC SERVICE UTILITIES Involves locating and operating connections for such public utilities as water, gas, steam, fuel oil, electricity. It requires a knowledge of regulations governing the location of these controls. The captain does this more in the small and medium departments while in the large department it is done by the fireman. Nearly all the personnel involved perform the task at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	7	0	0	2	0	0	0	0
BASIC-GENERAL	11	2	0	4	16	2	0	2	23	0	0	5
IN-DEPTH	6	2	0	3	13	3	1	2	20	2	0	0

Statewide Advisory Committee recommendations

CAP 31 3 3DRE : ENGR 41 3 3DRE : F/M 49 3 2D3D : INSP 1 2 3BRE : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* REMOVE DEBRIS Involves removing burned or partially burned materials to the outside of the building. The use of various tools and equipment is necessary. Requires a knowledge of possible danger in handling different kinds of material, and safe working practices. Except for engineers in small departments, captains, engineers and firemen perform this task at high frequency rates. Responsibility for the job falls chiefly on the fireman, in proportions ranging form 87 percent in small departments to 96 percent in large.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	1	0	0	14	0	0	2	3	0	0	0
BASIC-GENERAL	24	2	0	3	31	4	0	10	32	0	0	4
IN-DEPTH	23	7	0	8	20	8	1	5	32	0	0	0

Statewide Advisory Committee recommendations

CAP 44 3 3DRE : ENGR 52 3 3DRE : F/M 94 3 2D3D : INSP 1 3 D 2BN- : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* REMOVE HAZARDS Involves tearing down overhanging cornices, walls, timbers and chimneys; relieving floors of excess strain or weight; shoring up weak floors; and removal of fallen electrical wires or television antennas and wires. The primary responsibility for the job falls on the fireman, with proportions ranging from 74 percent in small departments, 80 percent in medium, and 88 percent in large. Captains, engineers, and firemen all perform this operation at high frequency rates in large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	9	3	0	2	1	0	0	0
BASIC-GENERAL	21	3	0	3	29	7	0	7	31	0	0	5
IN-DEPTH	24	8	1	8	20	6	1	5	32	2	1	0

Statewide Advisory Committee recommendations

CAP 44 3 3DRE : ENGR 44 3 2DME : F/M 85 3 2D3D : INSP 2 3 3BME : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 31. OVERHAULING PREMISES AND CONTROLLING UTILITIES CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
SAFEGUARD PROPERTY	53	68	76	H	H	H	3	3	3	3	5	5	3	4	3	1	1	1
CAPTAIN	52	50	82	H	H	H	3	3	3	3	5	3	3	4	4	1	1	1
ENGINEER	39	59	55	H	H	H	3	3	3	3	5	5	4	4	3	1	1	1
FIREMAN	70	88	89	H	H	H	3	3	3	3	5	5	3	4	3	1	1	1
INSPECTOR	8	8	0	L	H	L	3	3	0	5	3	0	3	4	0	1	1	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	5	0	0	H	L	L	3	0	0	4	0	0	3	0	0	1	0	0

* SAFEGUARD PROPERTY Involves leaving a responsible person in charge of property, and/or posting area, boarding up windows and doors, locking gates and doors or other means of entry. One-half to three-fourths of personnel perform this task at high frequency rates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	8	0	0	2	3	0	0	0
BASIC-GENERAL	21	4	0	4	24	4	1	8	26	0	0	5
IN-DEPTH	24	11	1	10	34	17	4	18	45	2	0	1

Statewide Advisory Committee recommendations

CAP 76 3 3DRE : ENGR 53 3 3DME : F/M 86 3 2D3D : INSP 2 3 3BME : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 32. FIRE INVESTIGATION

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY AND PRESERVE EVIDENCE	48	49	50	H M H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	78	81	85	M H M	3 3 3	3 3 5	4 4 4	1	1	1
ENGINEER	26	31	42	M H H	3 3 3	3 3 3	3 4 4	1	1	1
FIREMAN	52	46	41	L H H	3 3 3	4 5 4	4 3 3	1	1	1
INSPECTOR	79	92	71	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	0	0	H L L	3 0 0	2 0 0	3 0 0	1	0	0
IDENTIFY THE CAUSE OF FIRE	32	24	31	H H H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	73	77	87	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ENGINEER	11	14	14	M H H	3 3 3	3 3 5	3 4 4	1	1	1
FIREMAN	27	8	14	H L H	3 3 3	4 3 4	4 3 3	1	1	1
INSPECTOR	83	85	66	H H H	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	5	5	0	H M L	3 3 0	2 2 0	3 3 0	1	1	0
IDENTIFY DATA AND MAKE PROPER RECORDS	15	14	7	H H H	3 3 3	3 3 3	3 4 4	1	1	1
CAPTAIN	48	44	22	M H H	3 3 3	3 3 3	3 4 4	1	1	1
ENGINEER	4	9	3	H H H	3 3 1	5 3 3	4 4 3	14	1	1
FIREMAN	5	1	1	H M M	2 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	79	92	44	H H H	3 3 3	3 3 3	4 4 3	1	1	1
ALARM OPERATOR	0	1	0	L H L	0 2 0	0 2 0	0 3 0	0	1	0
MECHANIC	5	0	0	H L L	3 0 0	2 0 0	3 0 0	1	0	0

• IDENTIFY AND PRESERVE EVIDENCE Involves using accepted practices during the overhaul phases of a fire, knowing what to look for as evidence, protecting areas where evidence is located, photographing evidence, removing evidence from premises in proper manner, and safeguarding evidence until all criminal or civil actions have been completed. Most fire department members recognize their responsibility in completing this job at every fire. Although all ranks participate, this is primarily a responsibility of inspectors, who perform at a high rate of frequency. Captains in medium and large departments carry out this function at a high frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	3	1	0	2	0	0	0	0
BASIC-GENERAL	19	7	4	9	21	7	0	5	20	21	9	3
IN-DEPTH	22	10	4	10	25	17	6	12	24	9	7	3

Statewide Advisory Committee recommendations

CAP 84 3 3D4D : ENGR 39 3 2DME : F/M 43 3 2D3D : INSP 72 3 3D4D : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

• IDENTIFY THE CAUSE OF FIRE Involves knowing the ordinary as well as the unusual causes of fires, knowing why and how fires start and spread and what to look for when inspecting fire premises. Fewer people are capable of doing this job as it is usually specialized. Most personnel in firefighting are trained to preserve evidence just by minimizing disturbance to the fire area. Inspectors and captains perform this task in large proportions and at high rates of frequency; the captain's responsibility increases with size of department, while a greater percentage of inspectors in involved in the small department than in the large.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	1	0	0	0	3	0	0	0
BASIC-GENERAL	13	4	3	6	10	6	0	3	14	6	0	1
IN-DEPTH	16	9	5	9	13	10	3	8	13	10	7	0

Statewide Advisory Committee recommendations

CAP 84 3 3D4D : ENGR 14 3 2D3D : F/M 14 3 1A2D : INSP 72 3 3D4D : A/O 0 0 D 1AN- : MECH 1 3 D 1AN-

• IDENTIFY DATA AND MAKE PROPER RECORDS Involves interpreting fire cause records prepared by state agencies and national professional organizations, and contributing to state and national fire-cause records by accumulating local data, recording local data and submitting reports, as necessary, to appropriate agencies and organizations. Inspectors perform this task at high frequency rates in departments of all sizes; captains are active in small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	3	2	0	0	0	0	0	0
BASIC-GENERAL	7	1	0	2	4	1	1	1	3	0	0	0
IN-DEPTH	6	5	2	5	7	5	2	3	4	2	0	0

Statewide Advisory Committee recommendations

CAP 29 3 3DME : ENGR 4 3 2DME : F/M 2 3 D 1A2D : INSP 55 3 3D4D : A/O 0 0 D 1B2D : MECH 1 0 D 1AN-

TABLE 32. FIRE INVESTIGATION CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
IDENTIFY VALUES AND LOSSES	16	16	15	H H H	3 3 3	3 3 3	3 4 3	1 1 1
CAPTAIN	42	54	51	H H H	3 3 3	3 3 3	3 4 4	1 1 1
ENGINEER	10	11	14	M H H	3 3 3	3 5 3	3 4 3	1 1 1
FIREMAN	6	1	0	M M L	3 3 0	3 3 0	3 3 0	1 1 0
INSPECTOR	77	80	48	H H H	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	0	1	0	L H L	0 3 0	0 2 0	0 0 0	0 1 0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
INSPECT PREMISES	22	30	33	H H H	3 3 3	3 3 3	3 4 3	1 1 1
CAPTAIN	60	64	58	H H H	3 3 3	3 3 3	3 4 4	1 1 1
ENGINEER	11	12	12	M H H	3 3 2	3 3 3	3 4 3	1 1 1
FIREMAN	12	24	31	H H H	3 3 3	4 5 3	2 4 4	1 1 1
INSPECTOR	81	92	51	H H H	3 3 3	3 3 3	4 3 4	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
GUARD PROPERTY	24	21	15	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	34	16	13	H H H	3 3 3	3 3 3	3 4 3	1 1 1
ENGINEER	11	14	40	H H H	3 3 3	4 3 3	3 3 3	1 1 1
FIREMAN	29	27	6	L H H	3 3 3	3 5 4	3 4 3	1 1 1
INSPECTOR	37	39	15	H H H	3 3 2	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0

* IDENTIFY VALUES AND LOSSES Involves inspecting fire premises, inventorying property which has been destroyed or damaged, estimating total property values involved or exposed, and the value of that which is destroyed or damaged. As this job requires specialization, considerable training is necessary. It is done by a few ranks or classifications of men, with inspectors and captains performing at high frequency rates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	10	2	0	1	7	2	0	1	5	2	0	0
IN-DEPTH	4	4	1	3	6	5	2	3	8	1	1	0

Statewide Advisory Committee recommendations

CAP 50 3 3SME : ENGR 13 3 D 2SME : F/M 1 3 D 1ASD : INSP 57 3 3SAD : A/O 0 0 D 1AS- : MECH 0 0 D 1AS-

* INSPECT PREMISES Involves examining premises to determine fire cause, to identify evidence, to identify values and losses and to gather data for reports and records. Ranks other than those completing this survey may be involved in this job. The data show that both inspectors and captains perform this task at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	2	1	0	0	1	0	0	0
BASIC-GENERAL	11	3	2	4	11	6	0	5	9	0	0	1
IN-DEPTH	7	5	2	5	17	10	4	11	22	16	15	0

Statewide Advisory Committee recommendations

CAP 59 3 3SME : ENGR 22 3 2SME : F/M 28 3 1ASD : INSP 61 3 3SAD : A/O 0 0 D 1AS- : MECH 0 0 D 1AS-

* GUARD PROPERTY Involves maintaining a watch on fire premises until necessary investigations can be conducted. This job is done by the fire service in small departments. In large departments it will be done by private or public police agencies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	1	0	0	3	1	0	0	6	0	0	0
BASIC-GENERAL	12	1	0	2	6	0	0	0	8	0	0	1
IN-DEPTH	3	2	1	2	11	5	2	3	1	0	0	0

Statewide Advisory Committee recommendations

CAP 16 3 2SME : ENGR 33 3 2SME : F/M 22 3 1ASD : INSP 21 3 3SME : A/O 0 0 D 1AS- : MECH 0 0 D 1AS-

TABLE 32. FIRE INVESTIGATION CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INTERVIEW WITNESSES AND SUSPECTS	16	14	12	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	49	47	45	M	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	3	11	5	L	H	H	3	3	3	3	5	3	4	4	4	4	1	1
FIREMAN	7	0	0	M	L	L	2	0	0	4	0	0	2	0	0	1	0	0
INSPECTOR	77	86	48	H	H	H	3	3	3	3	3	3	4	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	5	0	0	H	L	L	3	0	0	2	0	0	3	0	0	1	0	0
SERVE SUBPOENAS	0	0	0	H	M	H	3	3	5	3	3	3	3	4	4	1	1	1
CAPTAIN	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEER	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
FIREMAN	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
INSPECTOR	4	8	4	H	M	H	3	3	5	3	3	3	3	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MAKE ARREST	1	2	0	H	L	H	3	3	3	3	3	3	3	4	4	1	1	1
CAPTAIN	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEER	0	8	0	L	M	L	0	3	0	0	3	0	0	3	0	0	1	0
FIREMAN	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
INSPECTOR	25	26	19	H	L	H	3	3	3	3	3	3	3	4	4	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* INTERVIEW WITNESSES AND SUSPECTS Involves knowing and using correct procedures for protecting constitutional rights of witnesses and suspects, questioning witnesses and suspects, and recording their statements. Inspectors and captains handle this responsibility, with all but captains in small departments performing at high frequency rates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	3	1	0	0	2	2	0	0
BASIC-GENERAL	7	1	0	2	5	2	0	2	2	1	0	0
IN-DEPTH	4	4	2	5	5	4	2	2	8	7	5	0

Statewide Advisory Committee recommendations

CAP 46 3 3DME : ENGR 5 3 D 2DME : F/M 1 0 D 1A2D : INSP 57 3 3D4D : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

* SERVE SUBPOENAS Involves locating subjects to be served and serving them correctly and legally. This is a police or arson bureau function when not performed by a member of the fire prevention bureau. Survey response showed only a very small percentage of inspectors performing this function.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	0	0	0	0	0	0	0	0	0	0	0	0
IN-DEPTH	0	0	0	0	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 0 0 D 1BN- : ENGR 0 0 D 1BN- : F/M 0 0 D 1AN- : INSP 4 3 2D3D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* MAKE ARREST Arrests made by fire service personnel are classified as citizen's arrests, except that fire department arson investigators are declared to be peace officers by state law and that other personnel may be declared to be peace officers by local ordinance. When arrests are made, strict attention must be given to legal and constitutional provisions, and the person making the arrest must be aware of the possibility of civil action against him for making a "false arrest." This is a police or arson bureau function, when not performed by a member of the fire prevention bureau.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	1	0	0	0	2	0	0	0	0	0	0	0
IN-DEPTH	0	0	0	0	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 0 0 D 1BN- : ENGR 1 0 D 1BN- : F/M 0 0 D 1AN- : INSP 20 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 32. FIRE INVESTIGATION CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
MAKE CHEMICAL ANALYSIS	2	0	1	H M H	3 3 5	3 3 5	4 3 4	13	14	1
CAPTAIN	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
ENGINEER	0	0	3	L L M	0 0 3	0 0 5	0 0 3	0	0	1
FIREMAN	4	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	2	4	4	L M H	3 3 5	3 3 3	4 3 4	3	14	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
PREPARE EVIDENCE FOR DISTRICT ATTORNEY	5	3	2	H L M	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	4	1	0	H M M	3 4 3	3 3 3	4 4 4	12341	1234	1
ENGINEER	0	0	3	L L L	0 3 1	0 3 3	0 4 3	01	234	1
FIREMAN	4	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	62	66	59	M L L	3 3 3	3 3 3	4 4 4	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
TESTIFY AS AN EXPERT WITNESS IN COURT	9	6	10	L L L	3 3 3	3 3 3	4 3 3	1	1	1
CAPTAIN	19	8	14	L L L	3 3 3	3 3 3	4 4 4	1	1	1
ENGINEER	0	0	11	L L L	0 3 3	0 3 2	0 4 4	0	123	1
FIREMAN	7	6	6	H H L	3 3 3	3 3 3	4 3 3	1	1	1
INSPECTOR	54	51	65	L L M	3 3 3	3 3 3	4 3 3	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

* MAKE CHEMICAL ANALYSIS This is a highly specialized field, requiring advanced training and special equipment. Few fire departments maintain the personnel and equipment necessary to conduct chemical analysis. This is a specialization job.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	0	0	0	0	1	0	0	0
IN-DEPTH	0	0	0	0	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 0 0 D 1CN- : ENGR 2 0 D 1BN- : F/M 1 0 D 1AN- : INSP 4 3 3DME : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* PREPARE EVIDENCE FOR DISTRICT ATTORNEY Involves preparing written brief, listing information regarding an alleged incendiary fire, the suspects involved, witnesses to be called and what they will testify to, physical evidence which is available, and other information which will assist in prosecuting the case. This is delegated almost entirely to the inspector, who performs the task at low or medium frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	1	0	0	1	1	0	0	0
IN-DEPTH	2	2	1	2	1	1	0	1	1	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 D 1DN- : ENGR 2 1 D 1DN- : F/M 1 0 D 1AN- : INSP 61 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* TESTIFY AS AN EXPERT WITNESS IN COURT Expert witnesses are those who are allowed to testify as to their opinions, rather than simply to state the facts of the matter. The court will decide whether a person, based upon his education and experience, is qualified as an expert in his field. Fire service personnel are often qualified by the court as experts and allowed to voice their opinions regarding fire causes, incendiary fires, fire behavior and other related matters. The inspector is most frequently called on to testify in such matters; captains and firemen, in the order named, also may do so. Except for firemen in small and medium departments, participation is at a low level of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	0	0	0	0	3	0	0	0
BASIC-GENERAL	3	0	0	0	4	0	0	0	6	2	0	0
IN-DEPTH	5	2	1	2	2	1	0	1	1	0	0	0

Statewide Advisory Committee recommendations

CAP 14 3 3DME : ENGR 8 3 2D3D : F/M 6 3 1A2D : INSP 62 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 32. FIRE INVESTIGATION CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INVESTIGATE INFORMATION OF ANTICIPATED FIRES	6	5	2	H	H	M	3	3	3	3	3	3	4	4	3	1	1	1
CAPTAIN	11	11	0	H	H	M	3	3	3	3	3	3	4	4	3	12	1	1
ENGINEER	0	1	6	L	L	H	0	3	2	0	3	3	0	4	3	0	1	1
FIREMAN	4	0	0	H	L	L	3	0	0	3	0	0	3	0	0	1	0	0
INSPECTOR	60	65	32	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* **INVESTIGATE INFORMATION OF ANTICIPATED FIRES** Information regarding anticipated fires may be received from private citizens, police agencies, insurance organizations or other agencies, or may be developed through analysis of local, state or national fire statistics. Activities directed toward preventing anticipated fires usually take the form of increased fire prevention work in the occupancies and/or areas where fires may be anticipated. This duty falls largely to inspectors, who perform it at high frequency level.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	3	0	0	0	2	1	0	1	2	0	0	0
IN-DEPTH	2	2	1	1	2	1	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CAP 3 3 2DME : ENGR 5 2 D 2DME : F/M 1 0 D 1AN- : INSP 4 0 3 2D3D : A/O 0 0 D 1B2D : MECH 0 0 D 1AN-

TABLE 33. ARSON INVESTIGATIONS

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY EVIDENCE AND TYPES OF ARSON	12	10	4	M M H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	25	33	13	H M M	3 3 3	3 3 3	4 4 4	1	1	1
ENGINEER	3	4	0	M H L	3 3 0	3 5 0	3 4 0	1	1	0
FIREMAN	8	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	75	79	50	M L H	3 3 3	3 3 3	4 4 4	4	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
UTILIZE OTHER LAW ENFORCEMENT AGENCIES	11	10	9	H M H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	35	34	37	H M M	3 3 3	3 3 3	4 4 4	1	1	1
ENGINEER	2	6	0	M H L	2 3 0	3 5 0	2 4 0	1	1	0
FIREMAN	4	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	73	79	44	M H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
IDENTIFY INVESTIGATIVE AND COURT PROCEDURE	5	2	3	L L M	3 3 3	3 3 3	4 3 3	4	1	1
CAPTAIN	3	1	7	L L M	3 4 3	1 3 3	1 4 4	0	12	1
ENGINEER	0	0	0	L H L	0 3 0	0 3 0	0 4 0	01234		0
FIREMAN	4	0	0	H L L	2 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	50	55	43	L L H	3 3 3	3 3 3	4 3 3	4	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

* IDENTIFY EVIDENCE AND TYPES OF ARSON Evidence of arson may be indicated by simultaneous fires, multiple points of origin, devices, accelerants, tampering with fire protection equipment, and other unusual circumstances. Types of arson fires include those which are deliberately set to defraud insurance companies, for revenge, for thrills, to cover other crimes and for other unlawful or immoral purposes. In large departments the personnel performing this job may be outside of the personnel surveyed. Three-fourths of inspectors in small departments and half of those in large perform this task, the latter at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	2	1	0	1	0	0	0	0
BASIC-GENERAL	5	3	0	2	3	1	0	1	0	0	0	0
IN-DEPTH	7	4	2	5	5	4	2	2	3	3	0	0

Statewide Advisory Committee recommendations

CAP 17 3 3DME : ENGR 1 3 2DME : F/M 1 0 D 1A2D : INSP 57 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* UTILIZE OTHER LAW ENFORCEMENT AGENCIES Establishing liaison and cooperation with police, sheriff's office, State Fire Marshals, Building Inspection, Health, and other agencies which may assist in investigating and prosecuting arson cases. The captains who perform this task in the small departments do this at a high frequency rate; this also is true of inspectors in medium and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	3	2	0	0	0	0	0	0
BASIC-GENERAL	6	2	0	3	3	0	0	0	1	0	0	0
IN-DEPTH	3	2	1	2	3	2	2	2	8	8	5	0

Statewide Advisory Committee recommendations

CAP 37 3 3D4D : ENGR 1 2 D 2DME : F/M 1 0 D 1A2D : INSP 53 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* IDENTIFY INVESTIGATIVE AND COURT PROCEDURE Investigative and court procedures vary depending upon whether suspects are juveniles or adults, and whether the crime committed is a misdemeanor or a felony. Court procedures include, for example, preliminary hearings, arraignments, trials by judge or jury, and appeals. This activity is assigned principally to inspectors; about half of those in small and medium departments take part at low frequency levels, and 43 percent in large departments at high rates of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	1	0	0	0	2	2	0	0
IN-DEPTH	1	1	0	2	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 6 3 3DME : ENGR 0 0 D 2CME : F/M 1 0 D 1A2C : INSP 45 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 33. ARSON INVESTIGATIONS CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
MAINTAIN RECORDS OF KNOWN ARSONISTS	4	2	2	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	5	0	0	L	H	H	3	3	3	3	3	3	3	4	4	1	1	14
ENGINEER	0	1	0	L	H	L	0	3	0	0	3	0	0	3	0	0	1	0
FIREMAN	0	0	1	L	L	L	0	0	3	0	0	2	0	0	3	0	0	1
INSPECTOR	71	62	48	H	H	H	3	3	3	3	2	3	3	3	3	1	1	1
ALARM OPERATOR	2	1	0	L	M	L	1	1	0	2	0	0	2	1	0	1	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
IDENTIFY METHODS AND MOTIVES USED BY ARSONISTS, CHILDREN, AND PYROMANIACS	17	9	11	M	M	H	3	3	3	3	3	3	4	4	3	1	1	1
CAPTAIN	20	24	40	M	H	H	3	3	3	3	3	3	4	4	3	1	1	1
ENGINEER	3	9	0	L	M	L	3	3	0	5	3	0	3	3	0	1	1	0
FIREMAN	21	0	1	M	L	L	2	0	3	3	0	2	3	0	3	1	0	1
INSPECTOR	69	87	50	H	M	H	3	3	3	3	3	3	4	3	3	14	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
TAKE PHOTOGRAPHS	5	4	3	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	14	1	7	L	H	H	3	3	3	3	3	3	3	4	4	1	1	1
ENGINEER	0	1	0	L	H	L	0	3	0	0	3	0	0	3	0	0	1	0
FIREMAN	1	1	0	M	H	H	3	3	3	5	5	3	2	3	4	1	1	1
INSPECTOR	58	78	42	H	M	H	3	3	3	3	3	3	3	3	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* MAINTAIN RECORDS OF KNOWN ARSONISTS Information regarding known arsonists may be developed locally as well as received from the State Fire Marshal's Office. Developing and maintaining a record system based upon department needs is indicated. The fireman and engineer indicated in this area are probably on special assignements. The data show that inspectors in departments of all sizes perform this task at high frequency rates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	3	1	0	2	1	0	0	0	2	0	0	0
IN-DEPTH	0	0	0	0	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 D 2DN- : ENGR 0 0 D 1BN- : F/M 1 0 D 1AN- : INSP 53 3 2DME : A/O 1 1 D 1AN- : MECH 0 0 D 1AN-

* IDENTIFY METHODS AND MOTIVES USED BY ARSONISTS, CHILDREN AND PYROMANIACS Requires knowing and recognizing various methods and motives and interpreting evidence in order to indicate the type of person responsible for incendiary fires. The large proportion of firemen in small departments performing this function is probably an indication that these men are also assigned to fire prevention duties. The job is done principally by inspectors and captains.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	7	2	2	3	4	2	0	2	4	2	0	0
IN-DEPTH	7	5	3	3	4	3	1	2	6	6	5	0

Statewide Advisory Committee recommendations

CAP 35 3 3DRE : ENGR 2 3 2CME : F/M 4 2 1A2C : INSP 58 3 3D4D : A/O 0 0 D 1AN- : MECH 0 0 D 1AN-

* TAKE PHOTOGRAPHS Involves taking photographs which will correctly and specifically depict evidence of arson. Special photographic knowledge and skills are required. May also involve use of darkroom facilities and related photographic equipment, and developing and maintaining photograph files and records. There are specialists for this work in the ranks of captain, engineer, and fireman. The data indicate that inspectors engage in this activity at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	1	2	0	0	0	2	0	0	0
IN-DEPTH	2	1	0	1	1	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 7 3 L 3DRE : ENGR 0 0 D 2DN- : F/M 0 3 1A2D : INSP 49 3 2CME : A/M 0 0 D 1AN- : MECH 0 0 D 1AN-

TABLE 33. ARSON INVESTIGATIONS CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE PHOTOGRAPHY	8	7	1	H H H	3 3 3	3 3 3	4 3 3	1	1	1
CAPTAIN	18	11	0	L H H	3 3 3	3 3 3	3 4 4	1	1	14
ENGINEER	0	9	0	L H L	0 3 0	0 3 0	0 3 0	0	1	0
FIREMAN	5	1	0	M H L	2 3 0	1 5 0	2 4 0	11234		0
INSPECTOR	65	81	44	H H H	3 3 3	3 3 3	4 3 3	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
UTILIZE CALIFORNIA STATE ARSON LAW	7	6	2	H M H	3 3 3	3 3 3	4 4 4	1	1	1
CAPTAIN	12	11	6	H H H	3 3 3	3 3 3	4 4 3	12	12	1
ENGINEER	0	6	0	L L L	0 3 0	0 3 0	0 4 0	0	1	0
FIREMAN	4	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0
INSPECTOR	69	75	38	H M H	3 3 3	3 3 3	4 3 4	14	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MAINTAIN CLEAR AND COMPLETE RECORDS	8	8	11	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	17	19	36	H H H	3 3 3	3 3 3	3 4 4	1	1	1
ENGINEER	3	5	3	H H M	3 3 1	3 3 3	3 3 3	1	1	1
FIREMAN	4	0	1	H L L	3 0 3	3 0 2	3 0 3	1	0	1
-INSPECTOR	67	88	49	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	0	5	4	L H H	0 1 3	0 3 3	0 4 3	0	1	1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

• UTILIZE PHOTOGRAPHY Involves using photographs to enhance investigations and court proceedings. There are specialists for this work in the ranks of captain, engineer, and fireman. The data indicate that inspectors engage in this activity at high levels of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	3	1	0	1	4	2	1	0	1	0	0	0
IN-DEPTH	2	1	0	1	1	1	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 4 3 3DAY : ENGR 1 0 D 2DAY : F/M 1 2 1ADB : INSP 52 3 3DAD : A/O 0 0 D 1AD- : MECH 0 0 D 1AD-

• UTILIZE CALIFORNIA STATE ARSON LAW Requires understanding, interpreting and applying more than 20 Penal Code Sections related to arson and incendiary fires. There are specialists for this work in the ranks of captain, engineer, and fireman. Inspectors are most active in this area; captains are less so. Most perform at high frequency rates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	1	0	0	0	0	0	0
BASIC-GENERAL	3	1	0	1	2	1	0	1	0	0	0	0
IN-DEPTH	3	2	1	3	3	3	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CAP 7 3 3DAY : ENGR 1 0 D 2DAY : F/M 1 0 D 1AD- : INSP 47 3 3DAD : A/O 0 0 D 1AD- : MECH 0 0 D 1AD-

• MAINTAIN CLEAR AND COMPLETE RECORDS Arson investigation records may include personal notebooks used to record information gathered as an investigation process, fire records and reports, alarm operator's reports, and formal fire investigation reports. They must be clear because they may be reviewed by persons unfamiliar with the cases they describe and because of possible extensive time lapses between investigations and court actions. They must be complete because investigators are legally and morally obligated to gather and record all possible facts pertinent to cases under investigation. Captains and inspectors are involved at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	2	1	0	0	0	0	0	0
BASIC-GENERAL	6	1	0	1	3	1	0	1	4	0	0	0
IN-DEPTH	1	1	1	1	3	2	2	2	7	1	0	0

Statewide Advisory Committee recommendations

CAP 11 3 3DAY : ENGR 3 3 2DAY : F/M 1 3 D 1AOD : INSP 57 3 2DAD : A/O 4 1 D 1AOD : MECH 0 0 D 1AD-

TABLE 34. MEETING THE PUBLIC

	PEN			FRQ	T-K	P-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY THE FIREMAN'S PUBLIC OBLIGATIONS	75	75	61	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	88	83	69	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	63	81	64	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	79	75	59	H H H	3 3 3	3 3 3	3 4 3	1	1	1
INSPECTOR	87	79	84	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	71	27	23	H H H	3 3 3	3 2 3	3 3 3	1	1	1
MECHANIC	18	0	12	H L H	3 0 3	5 0 3	3 0 2	1	0	1
IDENTIFY THE NECESSITY FOR GOOD PUBLIC RELATIONS	76	75	64	H H H	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	92	88	62	H H H	3 3 3	3 3 3	3 3 4	1	1	1
ENGINEER	63	72	64	H H H	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	77	75	65	H H H	3 3 3	3 3 3	3 4 3	1	1	1
INSPECTOR	87	88	87	H H H	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	83	40	54	H H H	3 3 3	3 1 3	3 3 3	1	1	1
MECHANIC	18	0	7	H L H	3 0 3	2 0 2	3 0 3	1	0	1
PARTICIPATE IN SPECIAL DETAILS TO ASSEMBLIES	55	50	47	M M M	3 3 3	3 3 3	3 3 3	1	1	1
CAPTAIN	74	70	45	L L M	3 3 3	3 3 3	3 3 3	1	1	1
ENGINEER	48	59	52	M L L	3 3 3	3 3 3	3 3 3	1	1	1
FIREMAN	55	41	48	L M H	3 3 3	3 3 3	3 3 3	1	1	1
INSPECTOR	79	89	77	M M M	3 3 3	3 3 3	3 3 3	1	1	1
ALARM OPERATOR	21	1	0	H L L	3 3 0	3 1 0	4 3 0	1	1	0
MECHANIC	14	0	0	H L L	3 0 0	3 0 0	3 0 0	1	0	0

* IDENTIFY THE FIREMAN'S PUBLIC OBLIGATIONS Involves developing an appreciation on the part of the public for the vast scope of fire department responsibilities, for the need to give full value for public monies expended and for the individual efforts which are required in order to adequately protect the public from the ravages of fire and other disaster. This is an activity in which all ranks and departments are involved in one form or another.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	19	5	0	3	18	5	1	3	10	2	0	0
BASIC-GENERAL	31	5	1	4	26	6	0	3	28	1	1	5
IN-DEPTH	22	9	3	9	29	15	4	9	22	14	16	0

Statewide Advisory Committee recommendations

CAP 73 3 3C4D : ENGR 66 3 2CME : F/M 64 3 2C3C : INSP 84 3 3CME : A/O 30 3 2C3C : MECH 11 3 D 1AN-

* IDENTIFY THE NECESSITY FOR GOOD PUBLIC RELATIONS Sound and effective public relations are a vital part of providing public fire protection. The people served by a fire department must understand the department's purpose and objectives as well as the necessity to maintain a strong fire department and to endorse and comply with fire prevention regulations and activities. This is an activity in which all ranks and departments are involved in one form or another. The attitude of alarm operators in answering telephone calls is an important factor in public relations for the department.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	16	4	0	0	18	6	1	3	12	2	0	3
BASIC-GENERAL	33	6	1	3	30	8	1	6	28	3	1	2
IN-DEPTH	21	9	3	8	25	15	2	7	22	13	16	0

Statewide Advisory Committee recommendations

CAP 70 3 3C4D : ENGR 65 3 2CME : F/M 68 3 2C3C : INSP 87 3 3C4D : A/O 56 3 2C3C : MECH 7 3 D 1AN-

* PARTICIPATE IN SPECIAL DETAILS TO ASSEMBLIES Involves maintaining fire and panic safety at large or unique public gatherings. Includes eliminating fire causes and hazards, maintaining exit ways and operating auxiliary fire fighting appliances when necessary. Alarm operators and mechnics in small departments who participate in this activity do so when they are assigned as firemen.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	2	0	0	10	1	0	1	4	0	0	0
BASIC-GENERAL	22	2	0	2	29	5	0	2	21	2	0	4
IN-DEPTH	20	7	1	7	10	3	0	5	20	9	15	1

Statewide Advisory Committee recommendations

CAP 52 3 3DRE : ENGR 52 3 3DME : F/M 48 3 1A2D : INSP 77 3 3DME : A/O 3 3 D 1A2C : MECH 2 0 D 1AN-

TABLE 34. MEETING THE PUBLIC CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
PREPARE FIRE DEPARTMENT DISPLAYS	45	40	26	L L L	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	54	49	16	L L L	3 3 3	3 3 2	3 3 2	1 1 1
ENGINEER	45	41	42	L L L	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	44	38	23	L M L	3 3 3	3 3 3	3 3 3	1 1 1
INSPECTOR	75	79	65	M L M	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	17	8	0	L H L	3 3 0	3 3 0	3 0 0	1 1 0
MECHANIC	5	5	8	L L L	3 2 3	2 3 3	3 3 3	1 1 1
PREPARE AND GIVE FIREMANSHIP TESTS	17	18	17	M M L	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	38	62	57	M M L	3 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	19	7	10	M M L	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	9	8	5	M H M	3 3 3	3 3 2	4 4 3	1 1 1
INSPECTOR	33	40	12	L M M	3 3 3	3 3 2	3 3 3	1 1 1
ALARM OPERATOR	6	0	0	H L L	3 0 0	3 0 0	4 0 0	1 0 0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
ADDRESS THE PUBLIC	37	24	24	H H H	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	52	37	55	H L H	3 3 3	3 3 3	3 4 3	1 1 1
ENGINEER	29	27	14	H H H	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	36	17	14	H M H	3 3 3	3 3 3	4 4 3	1 1 1
INSPECTOR	81	82	62	M H M	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	19	12	10	H H H	3 3 3	3 3 3	3 3 4	1 1 1
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0

* PREPARE FIRE DEPARTMENT DISPLAYS Includes preparing fire prevention and public information type displays and visual aids for special events and programs. Inspectors and engineers participate in greater percentages than do the other ranks. The frequency is normally low.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	0	11	0	0	0	4	0	0	0
BASIC-GENERAL	25	0	0	1	22	2	0	0	11	0	0	0
IN-DEPTH	13	3	1	4	4	2	0	2	10	0	0	0

Statewide Advisory Committee recommendations

CAP 25 3 3DME : ENGR 42 3 2BME : F/M 27 3 1A2D : INSP 68 3 3DME : A/O 3 3 D 1A2C : MECH 7 3 D 1A2D

* PREPARE AND GIVE FIREMANSHIP TESTS Involves developing procedures for, and administering, tests in fire prevention for Boy Scouts Troops. More captains are involved in this activity than are personnel in other ranks. This is accomplished at a moderate frequency in small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	0	0	0	0	2	0	0	0
BASIC-GENERAL	8	0	0	1	12	1	0	1	9	0	0	0
IN-DEPTH	7	3	1	3	4	2	0	3	7	0	0	1

Statewide Advisory Committee recommendations

CAP 55 3 3DRE : ENGR 11 3 2BME : F/M 6 3 D 1A2D : INSP 18 3 3DME : A/O 1 0 D 1AN- : MECH 0 0 D 1AN-

* ADDRESS THE PUBLIC Involves speaking before community service clubs, social clubs, fraternal orders and the like, as a representative of the fire service and the fire department, with and without visual aids. Captains and inspectors address the public in greater percentages than other ranks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	1	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	18	1	0	1	11	3	1	2	10	4	0	0
IN-DEPTH	13	6	2	3	5	6	2	3	12	6	1	0

Statewide Advisory Committee recommendations

CAP 52 3 L 3CME : ENGR 18 3 2CME : F/M 17 3 1A2C : INSP 67 3 3D4D : A/O 12 3 2B3D : MECH 0 0 D 1AN-

TABLE 34. MEETING THE PUBLIC CONTINUED

	MEN			FRQ			T-K			M-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INFORM THE PUBLIC OF TYPES OF SERVICE	49	44	33	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	64	51	58	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	42	42	34	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
FIREMAN	47	39	20	H	M	H	3	3	3	3	3	3	3	3	3	1	1	1
INSPECTOR	81	89	87	H	H	H	3	3	3	3	3	3	3	4	3	1	1	1
ALARM OPERATOR	33	38	57	H	H	H	3	3	3	3	2	3	3	3	4	1	1	1
MECHANIC	5	0	0	H	L	L	3	0	0	2	0	0	3	0	0	1	0	0
ADJUST COMPLAINTS	22	13	15	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	48	22	43	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ENGINEER	19	15	12	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
FIREMAN	9	3	1	H	M	H	3	3	3	3	3	2	3	4	3	1	1	1
INSPECTOR	90	89	90	H	H	H	3	3	3	3	3	3	3	3	3	1	1	1
ALARM OPERATOR	25	17	36	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
PREPARE NEWSPAPER AND OTHER PUBLICITY	8	6	2	H	M	H	3	3	3	3	3	3	3	3	3	1	1	1
CAPTAIN	21	8	2	H	L	H	3	3	3	3	2	2	3	3	3	1	1	1
ENGINEER	0	6	0	L	H	L	0	3	0	0	3	0	0	3	0	0	1	0
FIREMAN	1	0	0	H	M	L	3	3	0	3	3	0	3	4	0	1	124	0
INSPECTOR	62	60	31	H	M	H	3	3	3	3	3	3	3	3	3	1	1	1
ALARM OPERATOR	25	20	34	H	H	H	3	3	3	3	3	3	3	3	4	1	1	1
MECHANIC	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0

* INFORM THE PUBLIC OF TYPES OF SERVICES Involves activities included under Preparing Fire Department Displays and Addressing the Public. Inspectors are involved at a high frequency. Alarm operators perform this job through telephone contacts with the public.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	0	8	0	0	0	2	0	0	0
BASIC-GENERAL	25	2	0	3	28	10	0	1	22	2	0	4
IN-DEPTH	15	4	1	4	7	2	1	2	7	0	0	0

Statewide Advisory Committee recommendations

CAP 58 3 3DME : ENGR 36 3 2B3C : F/M 26 3 1A2B : INSP 87 3 3DME : A/O 51 3 2B3D : MECH 1 0 D 1AN-

* ADJUST COMPLAINTS Usually involves taking action to eliminate fire hazards and nuisances reported by citizens. May involve complaints from citizens regarding type of services rendered by department or actions of fire department personnel. Alarm operators perform this job through telephone contacts with the public. Inspectors and captains most frequently adjust complaints.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	15	1	0	1	9	1	0	0	7	0	0	0
IN-DEPTH	4	3	1	1	2	0	0	0	6	0	0	0

Statewide Advisory Committee recommendations

CAP 41 3 3DME : ENGR 13 3 2DME : F/M 2 3 1A2D : INSP 90 3 3D4D : A/O 32 3 1A3D : MECH 0 0 D 1AN-

* PREPARE NEWSPAPER AND OTHER PUBLICITY Involves preparing and submitting news releases, and meeting with and assisting members of the press. Alarm operators usually perform this job as part of their clerical responsibilities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	1	0	0	0	0	0	0	0
BASIC-GENERAL	5	1	0	1	4	1	0	0	1	0	0	0
IN-DEPTH	2	2	1	1	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 5 3 3DRE : ENGR 1 0 D 2DME : F/M 0 3 D 1AN- : INSP 39 3 3D4D : A/O 31 3 1A2D : MECH 0 0 D 1AN-

TABLE 35. FIRE PROTECTION

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
MAKE SURVEYS	20	13	18	H M H	3 3 3	3 3 3	3 3 4	1 1 1
CAPTAIN	26	25	52	M M H	3 3 3	3 3 3	3 4 3	1 1 1
ENGINEER	18	9	16	L L M	3 3 3	3 3 3	3 3 4	1 1 1
FIREMAN	15	6	3	H H L	3 3 3	3 3 3	3 4 3	1 1 1
INSPECTOR	73	74	74	H H H	3 3 3	3 3 3	3 3 4	1 1 1
ALARM OPERATOR	13	1	0	L L L	3 1 0	3 1 0	3 1 0	1 0 0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
CONDUCT FIRE DRILLS	24	23	16	M M M	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	48	39	52	H M L	3 3 3	3 3 3	3 4 3	1 1 1
ENGINEER	13	12	13	H M H	3 3 3	3 3 3	3 3 4	1 1 1
FIREMAN	18	21	1	H H M	3 3 3	3 3 3	3 3 3	1 1 1
INSPECTOR	81	82	66	M M M	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	0	0	5	L L H	0 0 3	0 0 3	0 0 3	0 0 1
MECHANIC	0	5	0	L L L	0 3 0	0 3 0	0 3 0	0 1 0
DEMONSTRATE FIRE EQUIPMENT	59	53	42	M M M	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	68	68	61	M M M	3 3 3	3 3 3	3 3 3	1 1 1
ENGINEER	65	56	67	L L M	3 3 3	3 3 3	3 3 3	1 1 1
FIREMAN	57	49	25	M H M	3 3 3	3 3 3	3 3 4	1 1 1
INSPECTOR	75	74	69	M H H	3 3 3	3 3 3	3 3 3	1 1 1
ALARM OPERATOR	15	10	9	H H H	3 3 3	3 1 3	3 1 4	1 0 1
MECHANIC	23	11	7	H H H	3 3 4	3 2 3	4 3 4	1 1 1

* MAKE SURVEYS Involves surveying premises to determine adequacy of fire safety programs and auxiliary fire fighting appliances and making recommendations for improvement. This is primarily a task that is assigned to the inspector and he usually performs it at a high frequency. Fifty-two percent of the captains in large departments also perform this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	0	2	0	0	0	2	0	0	0
BASIC-GENERAL	10	1	0	1	6	1	0	0	7	0	0	0
IN-DEPTH	6	3	1	3	4	3	0	0	9	2	0	0

Statewide Advisory Committee recommendations

CAP 45 3 3DME : ENGR 16 3 2DME : F/M 5 3 1A2D : INSP 74 3 3D4D : A/O 2 1 1A2D : MECH 0 0 D 1AN-

* CONDUCT FIRE DRILLS Involves observing and evaluating fire and exit drills in schools, institutions, factories and other occupancies and making recommendations for improvement. Inspectors and captains normally perform this function; however, it is accomplished at a moderate rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	2	0	0	0	2	0	0	0
BASIC-GENERAL	15	2	0	2	13	0	0	1	5	1	0	0
IN-DEPTH	6	2	0	3	8	2	0	2	9	0	0	1

Statewide Advisory Committee recommendations

CAP 50 3 3DME : ENGR 13 3 2DME : F/M 6 3 1A2D : INSP 70 3 3D4D : A/O 4 0 D 1AN- : MECH 1 0 D 1AN-

* DEMONSTRATE FIRE EQUIPMENT Involves the demonstration of fire fighting apparatus and equipment to fire station visitors and to the public in general during special events and programs. Approximately one-half of the fire service personnel are involved in this task and it is usually accomplished about once a month.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	1	0	0	4	0	0	0	6	0	0	0
BASIC-GENERAL	30	2	0	4	33	6	1	3	14	0	0	0
IN-DEPTH	18	4	1	7	14	3	0	4	23	0	0	3

Statewide Advisory Committee recommendations

CAP 63 3 3DME : ENGR 66 3 3DME : F/M 32 3 1A2D : INSP 70 3 3DME : A/O 10 3 1A2D : MECH 10 3 D 1A2B

TABLE 35. FIRE PROTECTION CONTINUED

	MEN			FRQ	T-K	M-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
ORGANIZE AND DRILL PRIVATE FIRE BRIGADES	6	3	1	M L M	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	13	2	0	M L H	3 3 3	3 3 3	4 4 4	1 1 1
ENGINEER	0	0	0	L M L	0 3 0	0 3 0	0 4 0	0 1 0
FIREMAN	3	3	0	M L L	3 3 0	3 3 0	3 3 0	1 1 0
INSPECTOR	46	36	42	L M M	3 3 3	3 3 3	4 3 3	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	0	0	M L L	3 0 0	2 0 0	3 0 0	1 0 0

* ORGANIZE AND DRILL PRIVATE FIRE BRIGADES Involves developing and training fire brigades at institutional, merchantile, manufacturing, and military installations. May involve motivating managements to organize brigades and employees to participate in the activities necessary for brigades to be effective. This job is usually performed by inspectors. Captains in small fire departments perform it because of a lack of personnel in the inspector rank in such departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	3	1	0	1	2	0	0	0	1	0	0	0
IN-DEPTH	2	1	0	1	0	0	0	0	1	0	0	0

Statewide Advisory Committee recommendations

CAP 2 3 3DME : ENGR 0 0 D 1B2B : F/M 1 3 D 1A2D : INSP 42 3 3D4D : A/O 0 0 D 1AN- : MECH 1 0 D 1AN-

TABLE 36. LAWS AND REGULATIONS

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE FEDERAL LAWS	30	40	32	H H H	3 3 3	1 1 1	2 3 3	1	1	1
CAPTAIN	48	42	47	H H H	1 3 1	1 1 1	3 3 3	1	1	1
ENGINEER	28	30	21	H H H	3 3 3	1 1 1	2 2 3	1	1	1
FIREMAN	21	43	29	H H H	3 3 3	1 1 1	2 3 2	1	1	1
INSPECTOR	56	60	50	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ALARM OPERATOR	60	38	23	H H H	3 3 1	1 1 1	2 3 3	1	1	1
MECHANIC	5	11	18	H H H	5 3 1	1 1 1	2 3 1	1	1	1
UTILIZE STATE LAWS	42	57	43	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	73	69	52	H H H	3 3 3	1 1 1	2 3 4	1	1	1
ENGINEER	45	59	42	H H H	3 3 3	1 1 1	3 3 4	1	1	1
FIREMAN	28	53	39	H H H	3 3 3	1 1 1	4 3 4	1	1	1
INSPECTOR	92	94	68	H H H	3 3 3	1 1 1	4 4 4	1	1	1
ALARM OPERATOR	46	22	13	H H H	3 3 3	1 1 1	3 3 3	1	1	1
MECHANIC	5	21	27	H H H	2 1 3	1 1 1	2 3 2	124	1	1
UTILIZE COUNTY ORDINANCES	34	44	35	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	61	50	43	H H H	3 3 3	1 1 1	2 3 3	1	1	1
ENGINEER	35	39	51	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	23	47	26	H H H	3 3 3	1 1 1	2 3 3	1	1	1
INSPECTOR	62	52	52	H H H	3 3 3	1 1 1	3 4 3	1	1	1
ALARM OPERATOR	35	18	41	H H H	1 3 3	1 1 1	3 3 4	1	1	1
MECHANIC	0	0	14	L L H	0 0 3	0 0 1	0 0 2	0	0	1

* UTILIZE FEDERAL LAWS Involves locating, interpreting and applying federal laws governing, for example, fire prevention, personnel matters, and communication. The alarm operator in the small department may also be the radio dispatcher and is therefore required to know the F.C.C. rules and regulations regarding radio operations. The inspectors utilize I.C.C. Regulations.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	1	0	0	13	5	0	1	5	1	1	1
BASIC-GENERAL	11	3	2	3	17	8	1	3	19	9	7	0
IN-DEPTH	8	4	1	5	7	7	3	6	1	1	0	0

Statewide Advisory Committee recommendations

CAP 47 1 3SME : ENGR 23 3 2SME : F/M 30 3 1ASD : INSP 52 3 3SME : A/O 30 3 1ASD : MECH 15 3 D 1ASD

* UTILIZE STATE LAWS Involves locating, interpreting and applying state laws governing, for example, fire and panic safety, handling of explosives, transportation of flammable liquids, motor vehicle operation, civil liabilities, maintenance of fire extinguishers, and incendiary fires. It is necessary for the inspector to know the state laws as established by the state agencies in order for him to successfully examine various types of occupancies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	2	0	1	14	5	0	3	7	3	1	1
BASIC-GENERAL	16	6	2	5	30	15	3	4	12	8	5	0
IN-DEPTH	13	6	1	6	10	9	3	8	18	11	1	2

Statewide Advisory Committee recommendations

CAP 57 3 3SME : ENGR 45 3 2ASD : F/M 37 3 1ASD : INSP 75 3 3SAD : A/O 19 3 1ASD : MECH 23 2 D 2SME

* UTILIZE COUNTY ORDINANCES Involves locating, interpreting and applying all county ordinances which govern fire prevention and protection. The captains and inspectors of small departments and the inspectors of medium departments must know the county ordinances to be enforced.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	1	0	0	10	1	0	0	5	0	0	0
BASIC-GENERAL	13	4	0	1	25	10	1	2	18	1	0	0
IN-DEPTH	9	6	2	4	6	6	3	4	22	10	1	0

Statewide Advisory Committee recommendations

CAP 46 3 3SME : ENGR 47 3 2SME : F/M 28 3 1ASD : INSP 53 3 3SME : A/O 37 3 2SME : MECH 10 0 D 1AS-

TABLE 36. LAWS AND REGULATIONS CONTINUED

	PEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INTERPRET MUNICIPAL GOVERNMENT ORGANIZATION	27	50	23	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	47	66	44	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1
ENGINEER	23	49	19	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	19	46	15	H	H	H	2	1	1	1	1	1	2	3	2	1	1	1
INSPECTOR	56	68	38	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
ALARM OPERATOR	29	33	21	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
MECHANIC	0	0	20	L	L	H	0	0	3	0	0	1	0	0	3	0	0	1
INTERPRET CITY CHARTER	17	37	21	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	28	55	36	H	H	H	3	3	1	1	1	1	4	3	2	1	1	1
ENGINEER	23	32	13	H	H	H	3	1	3	1	1	1	3	3	3	1	1	1
FIREMAN	9	35	18	H	H	H	1	1	1	1	1	1	2	2	1	1	1	1
INSPECTOR	27	40	35	H	H	H	3	3	3	1	1	1	2	4	3	1	1	1
ALARM OPERATOR	10	21	18	H	H	H	3	3	1	2	1	1	3	3	3	1	1	1
MECHANIC	0	5	18	L	H	H	0	1	3	0	1	1	0	2	3	0	1	1
UTILIZE CITY ORDINANCES	37	56	40	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	63	74	56	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	51	36	25	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	17	57	38	H	H	H	1	3	3	1	1	1	3	3	3	1	1	1
INSPECTOR	65	88	82	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
ALARM OPERATOR	65	40	21	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
MECHANIC	0	5	16	L	M	H	0	1	3	0	1	1	0	3	3	0	1	1

* INTERPRET MUNICIPAL GOVERNMENT ORGANIZATION Involves understanding municipal legislative bodies and process, administrative and management processes and responsibilities, and the functions of the various staff, advisory and operating bodies, divisions, and departments. The captains and inspectors of medium departments need to know the city organization in order to work with the building and legal departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	13	3	1	1	7	0	0	0
BASIC-GENERAL	10	0	0	0	32	10	1	4	10	2	0	0
IN-DEPTH	9	3	1	2	4	0	0	0	2	2	0	0

Statewide Advisory Committee recommendations

CAP 47 3 3DN- : ENGR 24 3 3DME : F/M 20 1 1A2D : INSP 44 3 3DME : A/O 24 3 2D3D : MECH 15 0 D 1AN-

* INTERPRET CITY CHARTER Involves understanding those charter provisions which apply to fire protection, personnel matters, municipal organization, and matters related to fire department's functions and responsibilities. Captains and inspectors perform the task of interpreting City Charters at a higher frequency with some in-depth training involved. Generally, less than 50% of the individuals involved perform this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	12	4	0	0	10	0	0	0
BASIC-GENERAL	6	1	0	1	16	4	1	2	4	0	0	0
IN-DEPTH	4	1	1	1	3	1	1	0	3	2	0	0

Statewide Advisory Committee recommendations

CAP 37 3 3DN- : ENGR 17 3 3DME : F/M 19 1 1A2D : INSP 35 3 3DME : A/O 18 2 2D3D : MECH 14 1 D 1A2D

* UTILIZE CITY ORDINANCES Involves locating, interpreting and applying those city ordinances which relate to the fire department. The captains and inspectors in medium and large departments need to know and enforce local fire regulations.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	0	0	0	19	0	0	0	12	1	0	0
BASIC-GENERAL	16	2	1	1	26	8	0	2	22	1	0	0
IN-DEPTH	10	2	1	2	7	1	1	0	3	0	0	0

Statewide Advisory Committee recommendations

CAP 59 3 3DME : ENGR 30 3 3DME : F/M 38 3 1A2D : INSP 81 3 3D4D : A/O 30 3 2D3D : MECH 12 1 D 1A2D

TABLE 36. LAWS AND REGULATIONS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
INTERPRET AND USE CIVIL SERVICE REGULATIONS	17	34	45	H	H	H	3	3	3	1	1	1	3	3	2	1	1	1
CAPTAIN	28	46	81	H	H	H	1	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	21	35	54	H	H	H	3	3	3	1	1	1	3	3	2	1	1	1
FIREMAN	13	31	30	H	H	H	3	3	3	1	1	1	2	2	2	1	1	1
INSPECTOR	21	24	11	H	H	H	3	3	3	1	1	1	3	4	2	1	1	1
ALARM OPERATOR	8	19	11	H	H	H	3	2	3	1	1	1	3	3	2	1	1	1
MECHANIC	0	5	23	L	H	H	0	1	3	0	1	1	0	2	2	0	1	1
INTERPRET RETIREMENT, PENSION, WORKMAN S COMPENSATION ACT	28	40	40	H	H	H	3	3	3	1	1	1	3	2	3	1	1	1
CAPTAIN	48	62	64	H	L	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	20	33	46	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	30	38	31	H	H	H	3	1	1	1	1	1	2	2	2	1	1	1
INSPECTOR	8	11	5	L	L	L	3	3	3	1	1	2	3	3	3	1	1	1
ALARM OPERATOR	4	28	14	H	H	H	2	3	1	1	1	1	3	3	3	14	1	1
MECHANIC	0	5	19	L	H	H	0	1	3	0	1	1	0	2	3	0	1	1
UTILIZE DEPARTMENT RULES AND REGULATIONS	81	90	86	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	94	97	94	H	H	H	3	3	3	1	1	1	3	4	4	1	1	1
ENGINEER	83	87	71	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
FIREMAN	75	93	90	H	H	H	3	3	3	1	1	1	3	2	3	1	1	1
INSPECTOR	92	84	74	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	90	65	67	H	H	H	3	3	3	1	1	1	3	4	4	1	1	1
MECHANIC	27	37	34	H	H	H	3	1	1	1	1	1	2	3	2	1	1	1

* INTERPRET AND USE CIVIL SERVICE REGULATIONS Involves locating, understanding and applying regulations governing recruitment, evaluation, promotion, responsibilities and rights of personnel. As opposed to small and medium departments, most large departments are under Civil Service. For this reason, the captains in large departments are required to know and to inform their men of Civil Service regulations.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	14	1	0	0	22	0	0	0
BASIC-GENERAL	7	1	0	0	15	4	1	4	17	0	0	1
IN-DEPTH	2	2	0	2	3	1	1	1	1	0	0	0

Statewide Advisory Committee recommendations

CAP 69 3 3DRE : ENGR 47 3 3DME : F/M 28 3 1A2D : INSP 14 3 3DME : A/O 11 3 2D3D : MECH 18 1 D 1AN-

* INTERPRET RETIREMENT, PENSION, WORKMAN'S COMPENSATION ACT Involves understanding benefits and limitations of state and local systems affecting department personnel. Captains in large and medium size departments are associated with this task more than any of the other ranks. The frequency is higher in the large department than in the medium department. A very small percentage of inspectors are involved in this task; when they are, it is at a very low frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	15	0	0	2	17	0	0	0
BASIC-GENERAL	10	1	0	2	14	2	0	1	16	0	0	0
IN-DEPTH	4	1	1	1	7	3	0	1	0	0	0	0

Statewide Advisory Committee recommendations

CAP 62 3 3DRE : ENGR 41 3 2DRE : F/M 32 1 1A2D : INSP 6 3 3DRE : A/O 14 2 2DRE : MECH 15 1 D 2DRE

* UTILIZE DEPARTMENT RULES AND REGULATIONS Involves interpreting and applying rules and regulations in such a manner as to provide standardized, effective and smooth-flowing departmental operations and techniques. The mechanic may be a city mechanic not directly connected to the fire department, therefore, the percentage of mechanics involved is low.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	16	0	0	0	22	0	0	0	14	0	0	0
BASIC-GENERAL	42	1	1	2	31	1	0	1	21	0	0	0
IN-DEPTH	19	2	1	2	36	6	0	3	50	1	1	0

Statewide Advisory Committee recommendations

CAP 95 3 3DME : ENGR 75 3 3DME : F/M 89 3 2D3D : INSP 78 3 3DME : A/O 70 3 2DME : MECH 34 1 2DME

TABLE 37. PERSONNEL AND FUNCTIONS

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY FIRE DEPARTMENT FUNCTIONS	64	74	51	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	90	90	89	H H H	3 3 3	1 1 1	3 3 4	1	1	1
ENGINEER	70	75	45	H H H	3 3 3	1 1 1	3 3 4	1	1	1
FIREMAN	55	72	39	H H H	3 3 1	1 1 1	3 4 3	1	1	1
INSPECTOR	52	62	43	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ALARM OPERATOR	73	58	67	H H H	3 3 3	1 1 1	3 3 3	1	1	1
MECHANIC	14	21	16	H H H	3 1 3	2 1 1	3 3 2	1	1	1
IDENTIFY AND INTERPRET DUTIES OF PERSONNEL	58	67	40	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	85	96	93	H H H	3 3 3	1 1 1	3 3 4	1	1	1
ENGINEER	58	62	21	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	51	62	25	H H H	3 3 3	1 1 1	2 4 2	1	1	1
INSPECTOR	42	45	31	H H H	3 3 3	1 1 1	4 4 3	1	1	1
ALARM OPERATOR	60	51	63	H H H	3 3 3	1 1 1	3 3 4	1	1	1
MECHANIC	18	21	23	H H H	3 1 3	1 1 1	3 2 2	1	1	1
IDENTIFY NECESSITY FOR STUDY AND TRAINING	64	72	51	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	90	96	94	H H H	3 3 3	1 1 1	3 3 4	1	1	1
ENGINEER	60	67	63	H H H	3 3 3	1 1 1	3 3 4	1	1	1
FIREMAN	60	69	29	H H H	3 3 1	1 1 1	3 4 3	1	1	1
INSPECTOR	56	67	55	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ALARM OPERATOR	56	42	33	H H H	3 3 3	1 1 1	3 3 3	1	1	1
MECHANIC	18	32	27	H H H	5 2 3	1 1 1	3 3 3	1	1	1

* IDENTIFY FIRE DEPARTMENT FUNCTIONS Involves recognizing the various factors and requirements of a public fire protection system, and relating each of the vast multitude of affiliated activities to the overall fire department function. In many departments, the captain is the first level of management and must know all of the fire department functions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	0	0	0	20	1	1	1	7	1	0	0
BASIC-GENERAL	35	2	2	4	28	4	0	1	18	0	0	0
IN-DEPTH	15	3	1	4	25	7	0	5	22	7	1	0

Statewide Advisory Committee recommendations

CAP 90 3 3C4C : ENGR 50 3 3CRE : F/M 46 3 1A2C : INSP 47 3 3CME : A/O 67 3 2CME : MECH 16 3 D 1AN-

* IDENTIFY AND INTERPRET DUTIES OF PERSONNEL Involves developing an understanding of how each man and his assignment contribute to the overall fire department function. The captain is often the first line of authority and must be able to identify, interpret, and assign duties.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	14	0	0	0	12	0	0	0	8	0	0	0
BASIC-GENERAL	25	1	0	3	29	4	0	1	10	2	0	0
IN-DEPTH	18	2	1	2	25	7	2	5	20	5	1	0

Statewide Advisory Committee recommendations

CAP 93 3 3C4C : ENGR 31 3 3CRE : F/M 34 3 1A2C : INSP 34 3 3CME : A/O 61 3 2C3C : MECH 22 3 L 1AN-

* IDENTIFY NECESSITY FOR STUDY AND TRAINING Involves recognizing and appreciating the need for individual study and training as well as group training, due to obligations to the public and in order to achieve self satisfaction from the job. The captain must keep abreast of new ideas and methods in order to train his men.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	13	4	2	2	9	1	0	1	3	3	1	0
BASIC-GENERAL	29	5	0	6	33	5	2	4	23	4	0	0
IN-DEPTH	20	3	1	4	27	11	4	9	16	5	1	1

Statewide Advisory Committee recommendations

CAP 94 3 3C4C : ENGR 63 3 3CME : F/M 38 3 1A2C : INSP 57 3 3CME : A/O 37 3 2C3C : MECH 27 3 L 1A2C

TABLE 37. PERSONNEL AND FUNCTIONS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY NECESSITY FOR OBLIGATION TO DUTY	69	73	73	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	80	93	71	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
ENGINEER	65	71	56	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	70	70	84	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
INSPECTOR	54	60	54	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	67	50	63	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
MECHANIC	36	42	23	H	H	H	3	3	3	1	1	1	2	3	2	1	1	1
IDENTIFY NECESSITY FOR OBEDIENCE	70	75	78	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	86	93	89	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
ENGINEER	61	72	56	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
FIREMAN	72	73	85	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1
INSPECTOR	56	64	59	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	67	57	63	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
MECHANIC	41	37	21	H	H	H	3	3	3	1	1	1	2	3	2	1	1	1
DEVELOP PROPER ESPRIT DE CORPS	72	69	65	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	92	86	93	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
ENGINEER	62	65	51	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
FIREMAN	73	67	60	H	H	H	3	3	3	1	1	1	4	3	1	1	1	1
INSPECTOR	63	64	52	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	71	58	55	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
MECHANIC	23	26	21	H	H	H	3	1	3	1	1	1	2	3	3	1	1	1

* IDENTIFY NECESSITY FOR OBLIGATION TO DUTY Involves understanding and appreciating the fire department functions, duties of personnel, and necessity for study and training. The captains in small and medium size departments are closer to and more involved with management than are the captains in the large departments. The firemen in large departments are generally exposed to more thorough indoctrination and training and are subject to more complete rules and regulations than are firemen in medium and small departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	18	1	0	1	14	1	0	1	15	0	0	1
BASIC-GENERAL	30	0	0	3	41	7	2	5	21	0	0	0
IN-DEPTH	19	4	2	4	17	6	2	2	36	1	1	1

Statewide Advisory Committee recommendations

CAP 75 3 3C4C : ENGR 59 3 3CRE : F/M 80 3 1A3C : INSP 55 3 3CME : A/O 62 3 2C3C : MECH 27 3 1AN-

* IDENTIFY NECESSITY FOR OBEDIENCE Involves recognizing, appreciating, and accepting the semi-military aspects of fire service work. The captain realizes the necessity for obedience as he is directly responsible for the actions of his men. The duties of the fireman in the large department may be more clearly defined than those of the fireman in the small and medium departments. The total unit within which he operates is more complex and therefore he must be more aware of the need for obedience.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	14	1	0	1	13	1	0	1	9	0	0	0
BASIC-GENERAL	25	2	0	3	42	6	2	5	41	3	0	0
IN-DEPTH	24	3	1	3	18	5	2	2	26	2	1	1

Statewide Advisory Committee recommendations

CAP 89 3 3C4C : ENGR 59 3 3CRE : F/M 82 3 1A3C : INSP 59 3 3CME : A/O 63 3 2C3C : MECH 26 3 1AN-

* DEVELOP PROPER ESPRIT DE CORPS Involves wholeheartedly participating in those activities which are necessary to develop loyalty, honor, and pride in the department and in the fire service as a whole. The captains, being responsible for the morale and esprit de corps of their commands, must be aware of their importance. In a small department the fireman and alarm operator may operate independently or in very small units which may develop proper esprit de corps.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	1	0	1	13	0	0	0	9	0	0	0
BASIC-GENERAL	31	3	0	4	38	5	2	4	17	2	0	0
IN-DEPTH	23	3	1	3	17	8	1	5	30	2	1	0

Statewide Advisory Committee recommendations

CAP 92 3 3DME : ENGR 54 3 3DME : F/M 63 3 1A3C : INSP 55 3 3DME : A/O 57 3 2D3D : MECH 22 3 1AN-

TABLE 38. PROFESSICNAL ORGANIZATIONS

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
PARTICIPATE IN NATICNAL FIRE SERVICE ORGANIZATIONS	23	30	5	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	43	25	7	M	L	H	3	3	3	1	1	1	3	3	2	1	1	1
ENGINEER	17	27	13	L	H	L	3	3	3	1	1	1	2	1	3	1	1	1
FIREMAN	21	35	1	H	H	M	3	1	1	1	1	1	3	2	1	1	1	0
INSPECTOR	25	46	15	H	L	M	3	3	3	1	1	1	3	1	3	1	1	1
ALARM OPERATOR	13	5	9	H	L	H	3	2	3	1	1	1	2	3	4	1	1	1
MECHANIC	18	5	4	H	M	M	3	3	5	1	1	1	3	3	4	1	14	1
PARTICIPATE IN STATE FIRE SERVICE ORGANIZATICNS	55	68	20	M	M	M	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	73	61	42	M	L	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	53	67	30	L	L	H	3	1	3	1	1	1	3	3	3	1	1	1
FIREMAN	48	76	8	L	H	H	3	1	1	1	1	1	2	1	1	1	1	1
INSPECTOR	71	69	38	M	M	M	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	56	17	9	M	M	H	3	3	3	1	1	1	2	3	4	1	1	1
MECHANIC	27	32	7	H	H	M	3	3	5	1	1	1	3	3	3	1	1	1
PARTICIPATE IN LOCAL FIRE SERVICE ORGANIZATICNS	64	80	32	M	M	M	3	3	3	1	1	1	3	3	1	1	1	1
CAPTAIN	65	85	53	M	M	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	65	75	60	M	M	M	3	3	3	1	1	1	3	3	2	1	1	1
FIREMAN	66	85	13	M	M	H	3	1	1	1	1	1	3	3	1	1	1	1
INSPECTOR	83	82	25	M	M	M	3	3	3	1	1	1	3	1	1	1	1	1
ALARM OPERATOR	35	39	13	M	M	H	3	3	3	1	1	1	2	3	4	1	1	1
MECHANIC	27	37	12	M	H	H	3	3	3	1	1	1	3	3	2	1	1	1

* PARTICIPATE IN NATIONAL FIRE SERVICE ORGANIZATIONS Involves becoming a member of and actively participating in such organizations as the National Fire Protection Association, International Association of Fire Chiefs, International Municipal Signal Association, and any other organization which is devoted to serving the profession. The captains in small departments may be required to perform the duties of subordinate chiefs, thus feeling an obligation to participate in these organizations to the same extent as would the chiefs. In the large department, the publications circulated by these professional organizations are furnished by the department.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	1	1	5	2	0	0	1	0	0	0
BASIS-GENERAL	9	0	0	1	9	2	0	3	3	0	0	0
IN-DEPTH	3	1	1	1	3	3	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 14 3 3DRE : ENGR 16 3 2DME : F/M 8 1 1A2D : INSP 21 3 3DME : A/O 9 3 2D3D : MECH 6 3 1A2D

* PARTICIPATE IN STATE FIRE SERVICE ORGANIZATIONS Involves becoming a member of, and actively participating in, such organizations as the California Fire Chiefs' Association and its Trainings Officers' and Fire prevention Officers' Sections, California Conference of Arson Investigators, California State Firemen's Association, California Rural Firemen's Association, and any other organization which is devoted to serving the profession. A larger percentage of personnel in the small and medium size departments participate as members of these organizations.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	15	1	0	3	18	2	0	1	5	1	0	0
BASIC-GENERAL	17	0	0	3	20	2	0	5	9	0	0	0
IN-DEPTH	3	1	1	1	4	4	0	1	0	0	0	1

Statewide Advisory Committee recommendations

CAP 48 3 3DRE : ENGR 38 3 2DME : F/M 23 1 1A2D : INSP 49 3 3DME : A/O 16 3 2D3D : MECH 13 3 1A2D

* PARTICIPATE IN LOCAL FIRE SERVICE ORGANIZATIONS Involves becoming a member of, and actively participating in, local and regional fire chiefs', training officers', fire prevention officers', arson investigators', and firemen's and other similar organizations. The captain and inspector in the small and medium departments may be required or delegated to participate as members of these local organizations. There is more participation by the captain, engineer, and fireman in the medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	19	0	0	1	15	1	0	0	11	2	0	0
BASIC-GENERAL	24	1	0	3	32	2	0	2	11	0	0	0
IN-DEPTH	6	1	1	1	8	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 59 3 3DRE : ENGR 63 3 3DRE : F/M 29 1 1A2D : INSP 40 3 3DME : A/O 20 3 2D3D : MECH 18 3 1A2D

TABLE 38. PROFESSIONAL ORGANIZATIONS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
PARTICIPATE IN COMMUNITY ORGANIZATIONS	41	50	25	M	M	M	3	3	3	1	1	1	3	1	1	1	1	1
CAPTAIN	57	54	43	M	M	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	43	46	33	M	H	M	3	3	3	1	1	1	3	1	1	1	1	1
FIREMAN	35	51	15	M	M	M	3	3	1	1	1	1	1	2	1	1	1	0
INSPECTOR	62	75	43	H	M	M	3	3	3	1	1	1	3	1	3	1	1	1
ALARM OPERATOR	29	22	12	M	M	H	3	3	3	1	1	1	3	2	2	1	1	1
MECHANIC	14	16	10	H	H	M	3	3	3	1	1	1	3	2	1	1	1	1

* PARTICIPATE IN COMMUNITY ORGANIZATIONS Involves becoming a member of and actively participating in service, youth, fraternal, religious and similar local organizations. Because in the small and medium departments a large part of the public relations program is usually the responsibility of the inspector, it is necessary for him to work with and participate in community organizations.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	1	11	3	0	0	0	0	0	0
BASIC-GENERAL	14	1	0	2	17	0	0	0	9	0	0	0
IN-DEPTH	3	1	1	1	2	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 46 3 3DRE : ENGR 36 3 2DME : F/M 23 3 1A2D : INSP 49 3 3DME : A/O 16 3 2D3D : MECH 11 3 1AN-

TABLE 39. MATHEMATICS

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
PERFORM ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION	78	83	78	H H H	3 3 3	1 2 1	3 3 3	1	1	1
CAPTAIN	83	88	77	H H H	3 3 3	1 2 1	3 3 3	1	1	1
ENGINEER	94	92	81	H H H	3 3 3	2 2 2	4 4 3	1	1	1
FIREMAN	73	85	80	H H H	3 3 3	2 2 1	3 3 3	1	1	1
INSPECTOR	58	81	70	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ALARM OPERATOR	52	21	27	H H H	3 3 3	1 1 1	3 3 3	1	1	1
MECHANIC	45	47	53	H H H	3 3 3	1 1 1	3 3 3	1	2	1
OBTAIN POWERS OF NUMBERS	50	62	27	H H H	3 3 3	1 2 1	3 4 3	1	1	1
CAPTAIN	63	55	22	H H H	3 3 3	1 2 1	3 4 4	1	1	1
ENGINEER	56	66	67	H H H	3 3 3	2 2 2	4 4 3	1	1	1
FIREMAN	47	71	15	H H H	3 3 3	1 2 1	4 3 3	2	1	1
INSPECTOR	42	34	22	H H H	3 3 4	1 1 2	3 4 4	1	2	12
ALARM OPERATOR	13	1	0	H H L	3 3 0	1 1 0	3 1 0	1	0	0
MECHANIC	32	21	9	H H H	3 3 3	1 1 1	3 4 3	124	2	1
EXTRACT SQUARE ROOT	56	70	49	H H H	3 3 3	1 2 1	3 3 3	1	1	1
CAPTAIN	57	72	81	H H H	3 3 3	1 2 1	3 3 4	1	1	1
ENGINEER	74	84	62	H H H	3 3 3	2 2 2	4 3 3	1	1	1
FIREMAN	51	72	34	H H H	3 3 3	1 2 1	3 3 3	1	1	1
INSPECTOR	44	36	22	H H H	3 3 3	1 1 2	3 4 4	1	2	12
ALARM OPERATOR	15	1	0	H H L	3 3 0	1 1 0	3 1 0	1	0	0
MECHANIC	36	21	10	H H L	3 3 3	1 1 1	4 4 3	1	2	1

* PERFORM ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION Involves the knowledge and use of basic principles of mathematics and skills in arithmetic that are needed to solve significant problems that are met on the job. All personnel, with the exception of alarm operators in medium and large departments, generally use basic arithmetical skills in their jobs. The captains in the small and medium departments may be more involved in bookkeeping and reporting than the captains in the large departments. Inspectors in medium and large size departments may be required to perform many more duties requiring the use of basic mathematics than those in small departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	2	5	3	0	3	7	0	0	0
BASIC-GENERAL	33	18	0	7	37	24	4	15	35	24	2	3
IN-DEPTH	29	19	2	18	34	27	9	20	27	23	15	1

Statewide Advisory Committee recommendations

CAP 79 3 3CN- : ENGR 84 3 3CME : F/M 80 3 2C3C : INSP 70 3 3CME : A/O 29 3 2C4C : MECH 51 3 2CME

* OBTAIN POWERS OF NUMBERS Involves the knowledge of method, and the ability to raise a given number to a designated power. This is required in solving problems related to hydraulics and pump operation as well as atomic radiation problems. The engineers in all departments frequently are concerned with this mathematical computation. The percentage of captains who perform this task in the small departments is approximately three times greater than in the large departments. Also, the captains in the small departments perform at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	4	0	2	10	9	2	7	1	0	0	0
BASIC-GENERAL	16	13	0	6	20	15	0	5	10	4	1	1
IN-DEPTH	19	16	2	12	25	20	9	15	13	5	1	1

Statewide Advisory Committee recommendations

CAP 32 3 3CRE : ENGR 65 3 3 CME : F/M 27 3 2C3C : INSP 26 3 3CME : A/O 2 3 2C3C : MECH 13 3 2CME

* EXTRACT SQUARE ROOT Extracting square root of numbers is necessary when testing pumps, making flow tests, planning water systems, and designing pump equipment. The captain in the medium and large departments may have more responsibility for the development of training material and for the instruction of subordinates. The fireman in the medium size department may be required to serve as an acting engineer more often than in the small and large departments, and therefore needs to know square root.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	3	0	2	7	5	0	3	3	0	0	0
BASIC-GENERAL	20	11	0	6	30	18	1	10	15	5	1	3
IN-DEPTH	24	18	2	16	27	21	8	15	29	24	15	1

Statewide Advisory Committee recommendations

CAP 77 3 3CRE : ENGR 66 3 3CME : F/M 41 3 1C2C : INSP 27 3 3CME : A/O 2 3 2C3C : MECH 15 3 D 2CME

TABLE 39. MATHEMATICS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
USE SIMPLE PROPORTION	55	63	47	H	H	H	3	3	3	1	2	1	3	3	3	1	1	1
CAPTAIN	56	64	59	H	H	M	3	3	3	1	2	1	3	3	4	1	1	1
ENGINEER	71	64	68	H	H	H	3	3	3	2	2	2	4	3	3	1	1	1
FIREMAN	52	69	37	H	H	H	3	3	3	1	2	1	3	3	3	12	1	1
INSPECTOR	42	31	28	H	M	H	3	3	3	1	1	1	3	4	3	1	12	1
ALARM OPERATOR	23	6	0	H	H	L	3	3	0	1	1	0	3	1	0	1	1	0
MECHANIC	27	26	11	H	H	H	3	3	3	1	1	1	3	3	3	1	12	1
USE SIMPLE ALGEBRAIC EQUATIONS	54	63	44	H	H	M	3	3	3	1	2	1	3	3	3	1	1	1
CAPTAIN	57	59	57	H	M	M	3	3	3	1	2	1	3	3	4	1	1	1
ENGINEER	66	62	66	H	H	H	3	3	3	2	2	2	4	3	3	1	1	1
FIREMAN	52	73	33	H	H	H	3	3	3	1	2	1	3	3	3	1	1	1
INSPECTOR	44	38	37	H	M	H	3	3	3	1	1	1	3	2	3	1	12	1
ALARM OPERATOR	10	1	0	H	H	L	3	3	0	1	1	0	3	1	0	1	0	0
MECHANIC	27	26	10	H	H	L	3	3	3	1	1	1	3	3	3	1	12	1

* USE SIMPLE PROPORTION Involves calculations for friction loss based upon gallons per minute flow. Proportions are also necessary when preparing certain fire fighting chemicals to be discharged through a hose line. More than 50 percent of the captains and engineers in all departments use simple proportions at a high rate of frequency. The engineer, regardless of the size of department, requires both accuracy and speed when making this calculation.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	1	7	4	0	3	3	1	0	1
BASIC-GENERAL	24	16	1	7	26	17	1	9	20	12	6	2
IN-DEPTH	19	16	2	13	24	20	8	15	16	22	10	1

Statewide Advisory Committee recommendations

CAP 59 3 3CRE : ENGR 68 3 3CME : F/M 43 3 1C2C : INSP 30 3 3CME : A/O 2 3 2C3C : MECH 15 3 2CME

* USE SIMPLE ALGEBRAIC EQUATIONS Involves formulas for engine pressure, nozzle pressure, friction loss, determining discharge, velocity; determining area, volume, and capacity. The fireman in the medium size department needs to be acquainted with and use simple algebraic equations in line of duty. He also may be acting as an engineer more often than the firemen in small and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	1	4	2	0	0	3	2	0	0
BASIC-GENERAL	17	13	0	7	28	19	3	11	12	7	1	2
IN-DEPTH	24	17	3	17	27	19	8	16	20	27	15	1

Statewide Advisory Committee recommendations

CAP 57 3 3CRE : ENGR 66 3 3CME : F/M 41 3 1C2C : INSP 38 3 3CME : A/O 2 3 2C3C : MECH 14 3 D 2CME

TABLE 40. ELEMENTARY HYDRAULICS

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY AND DEFINE SYMBOLS AND SIGNS	61	71	55	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	79	80	85	H	M	M	3	3	3	1	1	1	3	4	3	1	1	1
ENGINEER	87	84	77	H	H	H	3	3	3	2	2	1	4	4	4	1	1	1
FIREMAN	50	73	37	H	H	H	3	3	3	1	2	1	3	4	3	1	1	1
INSPECTOR	48	29	44	H	M	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	6	1	4	L	H	H	3	2	3	1	1	1	4	1	3	124	0	1
MECHANIC	27	21	6	H	H	H	3	3	3	2	1	1	4	3	4	1	1	12
INTERPRET FORMULAS	61	75	54	H	H	H	3	3	3	1	2	1	3	4	4	1	1	1
CAPTAIN	73	79	79	H	H	L	3	3	3	1	2	1	3	4	4	1	1	1
ENGINEER	90	92	83	H	H	H	3	3	3	2	2	1	4	4	4	1	1	1
FIREMAN	50	77	36	H	M	H	3	3	3	1	2	1	4	4	3	1	1	1
INSPECTOR	35	28	41	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	6	1	0	L	H	L	3	3	0	1	1	0	4	1	0	124	0	0
MECHANIC	32	16	7	H	H	H	3	3	1	1	1	1	4	3	4	1	1	1
DETERMINE AREA, VOLUME, AND CAPACITY	61	73	57	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	68	82	83	H	H	M	3	3	3	1	2	2	3	4	4	1	1	1
ENGINEER	89	91	89	H	H	H	3	3	3	1	2	2	4	4	4	1	1	1
FIREMAN	51	73	37	L	H	H	3	3	3	1	2	1	4	4	3	1	1	1
INSPECTOR	40	29	41	H	M	H	3	3	3	1	1	1	3	4	3	1	2	1
ALARM OPERATOR	10	0	0	H	L	L	3	0	0	1	0	0	4	0	0	1	0	0
MECHANIC	32	32	10	H	H	M	3	3	3	1	1	1	3	3	3	1	1	1

* IDENTIFY AND DEFINE SYMBOLS AND SIGNS Involves recognition and understanding of symbols and signs used in the application of fire service hydraulics. The captains in all departments are required to teach the meanings of signs and symbols to their subordinates. All engineers are required to use signs and symbols as a part of their job performance. The fireman in the medium size department is required to act as engineer more often than the fireman in small or large departments and so may need the knowledge.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	1	3	0	0	0	3	2	0	0
BASIC-GENERAL	25	15	0	10	21	15	2	10	17	11	1	3
IN-DEPTH	28	18	2	19	45	37	5	29	27	27	10	1

Statewide Advisory Committee recommendations

CAP 84 3 3CRE : ENGR 79 3 4CME : F/M 44 3 1C3C : INSP 43 3 3CME : A/O 4 3 1C2C : MECH 11 3 2C3C

* INTERPRET FORMULAS Requires recognizing and understanding the various formulas as used in the fire service and its related responsibilities. The captains in all departments are required to teach their subordinates needed formulas. All engineers are required to use formulas as a part of their job performance. The fireman in the medium size department is required to act as an engineer more than in other small or large departments, therefore he needs to be familiar with formulas. Also, a knowledge of formulas and interpreting them is necessary when studying for promotion or for qualification as an acting engineer.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	4	0	0	0	3	1	0	0
BASIC-GENERAL	21	13	0	10	21	16	1	10	14	9	1	2
IN-DEPTH	31	21	2	20	44	39	6	29	26	24	1	2

Statewide Advisory Committee recommendations

CAP 78 3 3CRE : ENGR 85 3 4CME : F/M 43 3 1C3C : INSP 39 3 3CME : A/O 1 3 1C2C : MECH 12 3 2C3C

* DETERMINE AREA, VOLUME, AND CAPACITY Required for inspection work, design of new stations, building new apparatus, designing water supplies, and fire hydraulics. The captains in all departments are required to teach their subordinates these skills; however, the captain in the small department may not be involved in the in-depth training of subordinates. All engineers are required to use these skills as a part of their job performance. The fireman needs these skills in the medium size department in order to qualify as an acting engineer or to qualify for promotion.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	5	0	1	5	0	0	0	3	0	0	0
BASIC-GENERAL	21	12	0	9	21	15	3	10	18	12	1	1
IN-DEPTH	28	20	2	21	43	37	6	30	24	19	9	1

Statewide Advisory Committee recommendations

CAP 81 3 3CRE : ENGR 89 3 4CME : F/M 44 3 1C3C : INSP 39 3 3CME : A/O 1 0 D 1C2C : MECH 16 3 2C3C

TABLE 40. ELEMENTARY HYDRAULICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
DETERMINE PRESSURE WHEN HEAD IS KNOWN	59	70	53	M M H	3 3 3	1 2 1	4 4 4	1 1 1
CAPTAIN	64	80	77	H M M	3 3 3	1 2 1	3 4 4	1 1 1
ENGINEER	84	91	85	M H H	3 3 3	2 2 2	4 4 4	1 1 1
FIREMAN	54	68	34	M M H	3 3 3	1 2 1	3 4 3	1 1 1
INSPECTOR	23	25	33	H M M	3 3 3	1 1 1	4 4 3	2 2 1
ALARM OPERATOR	6	0	0	L L L	3 0 0	1 0 0	4 0 0	1 0 0
MECHANIC	32	32	6	H H L	3 3 2	1 1 1	4 4 4	1 1 12
DETERMINE HEAD WHEN PRESSURE IS KNOWN	60	68	52	M M H	3 3 3	1 2 1	4 4 4	1 1 1
CAPTAIN	63	78	77	H M M	3 3 3	1 2 2	3 4 4	1 1 1
ENGINEER	87	86	83	M M H	3 3 3	2 2 2	4 4 4	1 1 1
FIREMAN	54	68	34	M M H	3 3 3	1 2 1	3 4 4	1 1 1
INSPECTOR	17	24	25	H M M	3 3 3	1 1 1	4 4 3	24 12 1
ALARM OPERATOR	6	0	0	L L L	3 0 0	1 0 0	4 0 0	1 0 0
MECHANIC	32	32	1	H H L	3 3 2	1 1 1	4 4 2	1 1 12
DETERMINE WEIGHT OF WATER AND ITS EFFECT ON STRUCTURES AND CONTENTS	57	63	49	H M M	3 3 3	1 2 1	4 4 4	1 1 1
CAPTAIN	68	63	84	H M M	3 3 3	1 2 1	3 4 4	1 1 1
ENGINEER	77	81	65	M M H	3 3 3	1 2 2	4 4 4	1 1 1
FIREMAN	52	65	31	M H H	3 3 3	1 2 1	4 4 4	1 1 12
INSPECTOR	21	21	30	H M M	3 3 3	1 1 1	4 4 3	2 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	23	16	2	H H L	3 3 3	2 1 1	4 3 4	1 1 12

* DETERMINE PRESSURE WHEN HEAD IS KNOWN Involves the use of basic mathematics in determining pressure at the outlet of a water source when that source is a given number of feet above the outlet. The captains in the medium and large departments are involved in training and writing instructional materials, and have been trained in depth in this area, probably in their previous service as engineers. The engineers in all departments are required to use this subject frequently.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	4	0	1	2	0	0	0	2	0	0	0
BASIC-GENERAL	20	13	0	9	22	15	2	15	15	11	1	1
IN-DEPTH	27	20	2	23	39	35	7	25	27	28	10	3

Statewide Advisory Committee recommendations

CAP 76 3 3CRE : ENGR 86 3 4CME : F/M 41 3 1C3C : INSP 31 3 3CRE : A/O 1 0 D 1C2C : MECH 13 3 2C3C

* DETERMINE HEAD WHEN PRESSURE IS KNOWN Involves the use of basic mathematics in calculating the elevation of a water source when given a pressure reading. The captains in the medium and large departments are involved in training and writing instructional materials. They have been trained in depth in this area. The engineers in all departments are required to use this subject frequently.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	4	0	1	4	1	0	1	3	2	0	0
BASIC-GENERAL	21	13	0	9	20	15	1	14	14	9	1	1
IN-DEPTH	27	19	2	23	40	36	6	25	24	28	10	2

Statewide Advisory Committee recommendations

CAP 75 3 3CRE : ENGR 84 3 4CME : F/M 41 3 1C3C : INSP 24 3 3CRE : A/O 1 0 D 1CN- : MECH 9 3 2C3C

* DETERMINE WEIGHT OF WATER AND ITS EFFECT ON STRUCTURE AND CONTENTS Involves basic knowledge of building construction and the state of repair of the building and its contents. It also requires knowledge and understanding of the effects of water on the contents, for example, absorption qualities. This, together with knowledge of the weight of water per gallon, plus an estimation of the amount of water within the building, would give some idea of possible effect. The captains in the large departments do more preplanning, and are required to use this knowledge frequently. Engineers in the small and medium departments are using this subject for upgrading. Also, their duties may be broader, thus requiring more use of this knowledge.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	1	3	1	0	2	2	2	0	0
BASIC-GENERAL	19	11	0	8	15	12	2	8	23	12	1	1
IN-DEPTH	28	21	2	20	41	34	6	25	20	19	10	2

Statewide Advisory Committee recommendations

CAP 79 3 3CRE : ENGR 69 3 4CME : F/M 38 3 2C3C : INSP 28 3 3CME : A/O 0 0 D 1CN- : MECH 7 3 D 2CME

TABLE 40. ELEMENTARY HYDRAULICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY SPRINKLER SYSTEMS, BENEFITS, LIMITATICNS	59	64	43	H M H	3 3 3	1 1 1	4 4 3	1	1	1
CAPTAIN	76	82	87	H M M	3 3 3	1 1 1	3 4 4	1	1	1
ENGINEER	80	63	34	M M M	3 3 3	1 2 1	4 3 4	1	1	1
FIREMAN	48	64	29	H M H	3 3 3	1 1 1	4 4 3	1	1	1
INSPECTOR	79	72	71	M H H	3 3 3	1 1 1	4 4 3	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	11	5	H H L	3 3 3	2 1 1	4 3 4	14	1	12
USE NATIONAL FIRE CODE	35	38	22	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	44	48	22	H H M	3 3 1	1 1 1	3 3 2	1	1	1
ENGINEER	35	34	13	H H H	3 3 3	1 1 1	4 4 3	1	1	1
FIREMAN	33	37	24	H M H	3 3 3	1 1 1	4 4 3	1	1	1
INSPECTOR	79	66	55	H H H	3 3 3	1 1 1	3 4 3	1	1	1
ALARM OPERATOR	0	1	13	L H H	0 5 3	0 1 1	0 1 3	0	0	1
MECHANIC	14	11	7	H H L	3 3 3	2 1 1	4 3 3	1	1	1
UTILIZE PRINCIPLES CF HYDRAULICS IN TESTING PUMPS	53	58	40	L L L	3 3 3	1 1 1	4 4 3	1	1	1
CAPTAIN	64	64	53	L L L	3 3 3	1 1 1	3 4 4	1	1	1
ENGINEER	86	86	76	L L L	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	40	54	23	L L L	3 3 3	1 1 1	4 4 3	1	1	1
INSPECTOR	19	6	2	H M L	3 3 3	1 1 1	3 4 3	1	12	12
ALARM OPERATOR	6	0	0	L L L	4 0 0	1 0 0	4 0 0	124	0	0
MECHANIC	59	74	41	H L L	3 3 3	1 1 1	4 3 3	1	1	1

* IDENTIFY SPRINKLER SYSTEMS, BENEFITS, LIMITATIONS Requires knowledge of sprinkler system types and an understanding of operation control. Must recognize the fact that an adequate water supply and pressure are necessary for proper operation. The captains become involved with this subject in instruction, preplanning, and inspections. The unique thing indicated here is that the engineer in the small department must often be capable of performing at the level of a captain. The inspectors in all departments are involved with sprinkler systems as a common practice.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	12	4	3	4	2	0	0	0
BASIC-GENERAL	21	14	1	8	21	12	2	10	15	8	6	2
IN-DEPTH	28	21	2	18	27	27	4	21	22	20	10	3

Statewide Advisory Committee recommendations

CAP 85 3 3CME : ENGR 44 3 3CME : F/M 36 3 1C3C : INSP 72 3 3C4B : A/O 0 0 D 1CN- : MECH 7 3 D 1CN-

* USE NATIONAL FIRE CODE Involves knowledge and understanding of the National Fire Code as it relates to suggested specifications for fire apparatus, acceptable performance, design, terms and definitions used in the fire service. The inspectors of small departments must rely on the prepared national codes as they do not commonly have their own local ordinances and codes.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	2	0	5	3	1	1	4	0	0	0
BASIC-GENERAL	12	5	0	2	18	6	1	5	7	2	1	2
IN-DEPTH	15	12	2	11	10	10	4	7	11	11	1	0

Statewide Advisory Committee recommendations

CAP 28 3 3CME : ENGR 19 3 3CME : F/M 27 3 1C3C : INSP 60 3 3CME : A/O 10 3 1C2C : MECH 8 3 D 1C2C

* UTILIZE PRINCIPLES OF HYDRAULICS IN TESTING PUMPS Requires knowledge of standards set forth for pump performance, and how to test a pump for performance. It requires knowledge of the facilities and equipment needed to do the job. It involves preparing and setting up the needed facilities and the ability to interpret formulas, make calculations, and make reports on the results of the test. The unique factor here is that the mechanic will test the pumps after each occasion that any mechanical work is done on them.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	0	2	1	0	0	0	1	0	0	0
BASIC-GENERAL	19	11	0	9	14	5	1	5	11	4	1	2
IN-DEPTH	27	17	1	19	43	21	6	23	26	7	0	1

Statewide Advisory Committee recommendations

CAP 56 3 3CME : ENGR 79 3 3CME : F/M 29 3 1C3C : INSP 5 3 3CME : A/O 1 0 D 1CN- : MECH 48 3 2C3C

TABLE 40. ELEMENTARY HYDRAULICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY FUNDAMENTALS OF PRESSURE, VACUUM, FLOW, HEAD, SUCTION DISPLACEMENT, FRICTION LOSS, BACK PRESSURE, HYDRANT PRESSURE, ENGINE PRESSURE, NOZZLE PRESSURE, AND CAPACITY	60	67	53	H H H	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	75	76	87	H H H	3 3 3	1 1 1	3 4 4	1	1	1
ENGINEER	92	92	87	H H H	3 3 3	2 2 1	4 4 4	1	1	1
FIREMAN	47	64	29	L H H	3 3 3	1 1 2	4 4 4	1	1	12
INSPECTOR	19	12	31	H M L	3 3 3	1 1 1	4 4 3	1	2	12
ALARM OPERATOR	6	0	0	L L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	45	74	37	H L H	3 3 3	1 1 1	4 3 4	1	1	1
INTERPRET EFFECT OF ADVERSE CONDITIONS ON PUMPS SUCH AS DRY OPERATION, SALT WATER, AND WATER TEMPERATURE	54	57	33	H H H	3 3 3	1 1 1	3 4 4	1	1	1
CAPTAIN	67	55	51	H H H	3 3 3	1 1 1	3 4 4	1	1	1
ENGINEER	83	69	86	H H H	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	43	60	6	H H H	3 3 3	1 1 1	3 4 3	1	1	1
INSPECTOR	4	8	20	H H M	3 3 3	2 1 1	3 4 4	1	12	123
ALARM OPERATOR	6	0	0	L L L	4 0 0	1 0 0	4 0 0	124	0	0
MECHANIC	50	74	40	H H H	3 3 3	1 1 1	3 3 4	1	1	1
INTERPRET PROPER SELECTION OF PUMPS RELATIVE TO DISCHARGE	45	45	31	H H H	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	47	33	52	H H M	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	72	56	73	H H H	3 3 3	1 2 1	4 4 4	1	1	1
FIREMAN	38	51	9	M M M	3 3 3	1 2 1	4 4 4	1	1	12
INSPECTOR	2	8	23	M H H	2 3 3	1 1 1	2 4 3	124	12	1
ALARM OPERATOR	6	0	0	L L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	36	58	14	H L L	3 3 3	1 1 1	4 4 4	1	1	1

* IDENTIFY FUNDAMENTALS OF PRESSURE, VACUUM, FLOW, HEAD, SUCTION, DISPLACEMENT, FRICTION LOSS, BACK PRESSURE, HYDRANT PRESSURE, ENGINE PRESSURE, NOZZLE PRESSURE, AND CAPACITY Requires a basic knowledge of the properties of matter, laws of motion, matter and motion. The mechanics of fluids must be understood as they relate to force, gravity, and density, to make possible a more advanced study and training in fire service hydraulics. The captains are involved in this area because their duties usually require them to provide instruction in these subjects, and also to prepare the instructional materials.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	3	0	2	2	0	0	0	4	3	0	0
BASIC-GENERAL	18	12	0	10	21	13	1	11	6	2	1	2
IN-DEPTH	35	23	3	26	41	30	6	25	35	32	1	4

Statewide Advisory Committee recommendations
CAP 84 3 3C4C : ENGR 88 3 4CME : F/M 36 3 1C3C : INSP 27 3 3CME : A/O 1 0 D 1CN- : MECH 43 3 2C3C

* INTERPRET EFFECTS OF ADVERSE CONDITIONS ON PUMPS SUCH AS DRY OPERATION, SALT WATER, AND WATER TEMPERATURE Requires a knowledge of effects of running a dry pump or of not flushing thoroughly after pumping salt water, the effects of a pump idling and churning water, and the possible results. In small and large departments the engineer may be charged with this responsibility, whereas the mechanic in the medium size department may establish the rules and procedures governing these subjects.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	3	1	0	0	3	0	0	0
BASIC-GENERAL	23	11	0	12	17	10	1	8	10	4	1	3
IN-DEPTH	23	16	1	17	32	25	6	18	13	12	1	2

Statewide Advisory Committee recommendations
CAP 54 3 3C4C : ENGR 83 3 3CME : F/M 18 3 1C3C : INSP 16 3 3CME : A/O 1 0 D 1CN- : MECH 46 3 2C3C

* INTERPRET PROPER SELECTION OF PUMPS RELATIVE TO DISCHARGE Involves having a knowledge of the requirements that must be met and the volume of water needed and available. From this, the selection of the pump is made. In small and large departments the engineer may be charged with this responsibility whereas the mechanic in the medium size department may establish the rules and procedures governing these subjects.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	2	3	1	0	0	3	3	1	1
BASIC-GENERAL	14	7	0	5	11	8	0	5	7	7	0	1
IN-DEPTH	24	13	1	15	27	25	5	17	15	10	1	2

Statewide Advisory Committee recommendations
CAP 49 3 3C4C : ENGR 71 3 4CME : F/M 19 3 1C3C : INSP 18 2 3CME : A/O 1 0 D 1CN- : MECH 23 3 2CME

TABLE 40. ELEMENTARY HYDRAULICS CONTINUED

	PEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE R.P.M. OF MOTOR AND PUMP AND THEIR RELATION TO DISCHARGE	59	57	40	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
CAPTAIN	52	57	46	H	L	M	3	3	3	1	1	1	4	4	3	1	1	1
ENGINEER	83	72	75	H	H	H	3	3	3	1	2	1	4	4	4	1	1	1
FIREMAN	59	59	26	L	M	H	3	3	3	1	2	2	3	4	4	1	1	1
INSPECTOR	2	8	20	M	H	M	2	3	3	1	1	1	2	4	4	12	12	123
ALARM OPERATOR	6	0	0	L	L	L	4	0	0	2	0	0	4	0	0	2	0	0
MECHANIC	50	68	30	L	H	L	3	3	3	1	1	1	3	4	3	1	1	1
IDENTIFY THE CHARACTERISTICS OF PISTON TYPE, CENTRIFUGAL, AND ROTARY GEAR PUMPS, AND THE PROPER APPLICATION OF EACH	63	69	51	M	M	H	3	3	3	1	1	1	3	4	4	1	1	1
CAPTAIN	73	75	80	M	M	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	84	93	86	M	M	H	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	59	67	29	L	H	H	3	3	3	1	1	1	3	4	4	1	1	1
INSPECTOR	6	8	20	M	H	M	3	3	3	1	1	1	4	4	4	1	12	123
ALARM OPERATOR	6	0	0	L	L	L	4	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	50	63	40	H	H	L	3	3	3	1	1	1	4	4	4	1	1	1
IDENTIFY SINGLE-STAGE OR MULTI-STAGE SERIES AND PARALLEL PUMPS AND THEIR LIMITATIONS	59	69	53	M	M	H	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	75	75	82	M	M	M	3	3	3	1	1	1	3	3	4	1	1	1
ENGINEER	82	91	87	M	H	H	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	52	68	31	M	H	H	3	3	3	1	1	1	4	4	3	1	1	1
INSPECTOR	6	8	22	M	H	M	3	3	3	1	1	1	4	4	4	1	12	12
ALARM OPERATOR	6	0	0	L	L	L	4	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	55	68	39	H	L	L	3	3	3	1	1	1	3	3	4	1	1	1

* DETERMINE R.P.M. OF MOTOR AND PUMP AND THEIR RELATION TO DISCHARGE Requires knowledge and understanding of the manufacturer's specifications for the particular type of engine and gear ratio. Must know how to read and interpret the tachometer to determine r.p.m. and relation of discharge to the r.p.m. The mechanic in the medium size department may have more responsibility for teaching pump operation. The engineers in all departments are charged with the responsibility for having this knowledge.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	2	1	0	1	1	0	0	0
BASIC-GENERAL	20	8	0	6	16	11	1	7	12	5	1	2
IN-DEPTH	31	20	1	23	35	25	5	20	26	10	1	2

Statewide Advisory Committee recommendations

CAP 48 3 3C4C : ENGR 76 3 4CME : F/M 32 3 1C3C : INSP 16 3 3CRE : A/O 1 0 D 1CN- : MECH 38 3 2C3C

* IDENTIFY THE CHARACTERISTICS OF PISTON TYPE, CENTRIFUGAL, AND ROTARY GEAR PUMPS, AND THE PROPER APPLICATION OF EACH Requires knowledge and understanding of the construction and application of the types of pump used in the fire service. The fireman in the medium size department needs to be familiar with this information as he may be required to act as an engineer more often than firemen in small or large departments. The inspector in the large department deals with pumps in his industrial inspection work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	8	0	0	0	4	3	0	0
BASIC-GENERAL	25	16	0	12	20	14	0	11	11	6	1	3
IN-DEPTH	30	19	1	22	36	32	6	21	32	13	6	1

Statewide Advisory Committee recommendations

CAP 78 3 3C4C : ENGR 86 3 3C4C : F/M 38 3 1C3C : INSP 17 3 3CRE : A/O 1 0 D 1CN- : MECH 44 3 2C3C

* IDENTIFY SINGLE-STAGE OR MULTI-STAGE SERIES AND PARALLEL PUMPS AND THEIR LIMITATIONS Calls for understanding of certain hydraulic and mechanical principles regarding volume, capacity, and pressure. It requires knowledge and ability to produce best results with a pump up to its limits of production. Engineers are all directly involved as this is part of the knowledge required to do their jobs properly. The inspector in the large department may become more involved with this category in his industrial inspection work. The mechanic in the medium size departments may have broader responsibilities than merely those of repairing equipment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	2	0	0	0	4	3	0	0
BASIC-GENERAL	18	11	0	9	21	13	1	9	11	7	1	5
IN-DEPTH	34	21	2	25	39	33	5	22	32	15	1	1

Statewide Advisory Committee recommendations

CAP 80 3 3C4C : ENGR 87 3 4CME : F/M 39 3 1C2C : INSP 18 3 3CME : A/O 1 0 D 1CN- : MECH 45 3 2CME

TABLE 40. ELEMENTARY HYDRAULICS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
RECOGNIZE THE PARTICULAR CARE REQUIRED OF PISTON TYPE PUMPS	45	33	19	H	H	M	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	46	20	39	M	H	L	3	3	3	1	1	1	3	4	4	1	1	1
ENGINEER	48	49	30	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
FIREMAN	50	36	6	L	L	M	3	3	3	1	1	1	3	4	4	1	1	1
INSPECTOR	4	8	20	H	H	M	3	3	3	2	1	1	4	4	4	124	12	123
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	45	58	28	H	H	H	3	3	5	1	1	1	4	4	4	1	1	1
USE OF CHURN VALVES AND RELIEF VALVES	58	56	45	H	H	H	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	58	45	52	H	H	M	3	3	3	1	1	2	3	4	4	1	1	1
ENGINEER	87	90	91	H	H	H	3	3	3	2	2	2	4	4	4	1	1	1
FIREMAN	54	54	26	M	H	H	3	3	3	1	2	2	4	4	4	1	1	1
INSPECTOR	6	2	22	M	H	M	3	3	3	1	1	1	4	4	4	1	124	12
ALARM OPERATOR	6	0	0	H	L	L	3	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	64	68	45	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
USE OF PRIMING DEVICES FOR DIFFERENT PUMPS	63	55	47	H	M	H	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	52	47	62	H	M	M	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	88	85	93	H	H	H	3	3	3	2	2	2	4	4	4	1	1	1
FIREMAN	64	55	26	H	H	H	3	3	3	2	2	1	3	4	4	1	1	1
INSPECTOR	10	2	22	H	H	H	3	3	4	1	1	2	4	4	4	1	124	123
ALARM OPERATOR	6	0	0	H	L	L	4	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	64	58	48	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1

* RECOGNIZE THE PARTICULAR CARE REQUIRED OF PISTON TYPE PUMPS Must have a working knowledge of pump construction, operation, and cause and effect of certain types of abuses to the pump. Must know how to maintain the pump. The mechanic in medium size departments is more involved in training than the mechanics in the small and large departments; thus, he must be knowledgeable in this area. The inspector in the large department makes industrial inspections involving these pumps.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	3	2	1	0	1	4	3	1	1
BASIC-GENERAL	16	7	0	5	12	8	3	3	4	0	0	0
IN-DEPTH	21	16	2	16	16	15	3	10	10	7	1	1

Statewide Advisory Committee recommendations

CAP 37 3 L 3C4C : ENGR 35 3 4CRE : F/M 16 3 1C2C : INSP 16 3 3CME : A/O 0 0 D 1CN- : MECH 34 3 2CME

* USE OF CHURN VALVES AND RELIEF VALVES Requires knowledge and understanding of the function of each and how to operate. Requires reading and understanding of pressure gauge readings in relation to the valves. Engineers in all departments are well informed in this area as it is part of their job requirements. The inspector in the large department makes industrial inspections regarding valves. In the small and medium size departments the mechanic is responsible for administration and actual work; in the large, he often handles just the administrative end of the job.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	2	0	0	0	0	2	0	0	0
BASIC-GENERAL	18	10	0	10	15	9	0	7	11	6	1	3
IN-DEPTH	33	21	2	23	36	28	6	23	27	10	1	1

Statewide Advisory Committee recommendations

CAP 52 3 3C4C : ENGR 90 3 4CRE : F/M 33 3 1C2C : INSP 17 3 3CME : A/O 1 0 D 1CN- : MECH 51 3 2CME

* USE OF PRIMING DEVICES FOR DIFFERENT PUMPS Requires knowledge of various priming devices as used on pumps, and understanding of differences in theory and operation. The job requires knowledge of procedures for maintenance and servicing. Engineers in all departments are well informed in this area as it is part of their job requirements. The inspector in the large department makes industrial inspections regarding these devices. In the small and medium size departments the mechanic is responsible for administration and actual work; and in the large department, often just for the administrative end of the job.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	2	1	0	0	0	2	0	0	0
BASIC-GENERAL	25	12	0	11	15	9	0	7	7	1	1	2
IN-DEPTH	31	18	2	21	38	26	4	19	35	16	1	2

Statewide Advisory Committee recommendations

CAP 59 3 3C4C : ENGR 91 3 4CME : F/M 35 3 1C2C : INSP 18 3 3CME : A/O 1 0 D 1CN- : MECH 51 3 2CME

TABLE 41. RELATED CHEMISTRY

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY THEORY AND FUNDAMENTALS OF COMBUSTION	67	73	58	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	91	89	85	H	H	H	3	3	3	1	1	2	3	3	4	1	1	1
ENGINEER	64	61	73	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
FIREMAN	67	79	43	M	H	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	71	74	80	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	27	32	17	H	H	H	3	3	4	1	1	1	3	4	4	1	1	1
IDENTIFY CAUSE AND EFFECT OF IMPROPER COMBUSTION	61	69	55	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	82	83	78	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ENGINEER	61	58	70	H	H	H	3	3	3	1	1	1	3	4	4	1	1	1
FIREMAN	59	75	41	M	H	H	3	3	3	1	1	1	3	4	4	1	1	1
INSPECTOR	65	59	83	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	27	32	19	H	L	H	3	3	5	1	1	1	3	4	4	1	1	1
IDENTIFY COMMON VOLATILE OILS	49	56	51	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	74	75	81	H	M	M	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	54	56	63	M	H	H	3	3	3	1	1	1	3	4	3	1	1	1
FIREMAN	42	53	35	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	67	68	84	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	0	5	L	L	H	0	0	3	0	0	2	0	0	2	0	0	1
MECHANIC	18	26	1	H	M	M	3	3	3	1	1	1	3	3	3	1	1	1

* IDENTIFY THEORY AND FUNDAMENTALS OF COMBUSTION Requires knowledge, understanding and application of the sciences of Physics and Chemistry as they relate to combustion. Captains in all departments must constantly apply this fundamental knowledge. The fireman in the medium size department will need this knowledge as he may be interested in studying for supervisory promotion. The inspector applies this knowledge in his fire prevention and inspection work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	4	0	1	2	2	0	1	0	0	0	0
BASIC-GENERAL	28	12	1	11	30	21	2	13	16	13	2	4
IN-DEPTH	26	20	2	17	39	29	7	19	32	29	8	3

Statewide Advisory Committee recommendations

CAP 86 3 3CME : ENGR 70 3 3CME : F/M 48 3 1C3C : INSP 78 3 3CME : A/O 0 0 D 1CN- : MECH 20 3 D 1C2C

* IDENTIFY CAUSE AND EFFECT OF IMPROPER COMBUSTION Requires knowledge and understanding of factors necessary for complete combustion and recognition of visible results when factors are missing. Captains in all departments must constantly apply this fundamental knowledge. The fireman in the medium size department will need this knowledge as he may be interested in studying for supervisory promotion. The inspector in the large department may be more involved in this area due to his inspection and prevention work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	1	3	2	0	1	0	0	0	0
BASIC-GENERAL	28	12	1	8	26	16	1	10	24	12	1	2
IN-DEPTH	24	18	1	15	36	27	8	19	28	26	11	1

Statewide Advisory Committee recommendations

CAP 79 3 3CME : ENGR 67 3 3CME : F/M 48 3 1C3C : INSP 77 3 3CME : A/O 0 0 D 1CN- : MECH 22 3 D 1C2C

* IDENTIFY COMMON VOLATILE OILS Requires a knowledge and interpretation of the National Fire Codes as they relate to the various types of volatile oils. The captains in all departments are required to have this knowledge for constant application. The inspector in the large department has more exposure to this problem than in the medium and small departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	1	5	2	0	2	3	2	0	0
BASIC-GENERAL	23	10	1	4	22	14	2	7	15	15	1	2
IN-DEPTH	18	13	2	12	26	17	4	15	24	23	16	0

Statewide Advisory Committee recommendations

CAP 79 3 3CME : ENGR 61 3 3CRE : F/M 38 3 1C2C : INSP 80 3 3CME : A/O 4 0 D 1CN- : MECH 7 3 D 1CN-

TABLE 41. RELATED CHEMISTRY CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY COMMON GASES ENCOUNTERED AT FIRES	56	60	64	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	81	77	82	H	H	H	3	3	3	2	2	2	4	3	4	1	1	1
ENGINEER	55	53	66	M	H	H	3	3	3	1	2	1	3	4	4	1	1	1
FIREMAN	54	61	59	M	M	H	3	3	3	1	2	2	3	4	4	1	1	1
INSPECTOR	63	71	71	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	0	5	L	L	H	0	0	3	0	0	2	0	0	2	0	0	1
MECHANIC	5	11	0	H	L	L	3	3	0	1	1	0	3	3	0	1	1	0
IDENTIFY EXOTIC FUELS	35	40	42	H	M	H	3	3	3	1	1	1	4	4	3	1	1	1
CAPTAIN	57	56	70	H	H	M	3	3	3	2	2	2	4	4	4	1	1	1
ENGINEER	24	44	48	L	M	H	3	3	3	1	1	1	4	4	3	1	1	1
FIREMAN	36	36	29	H	M	H	3	3	3	1	2	1	4	4	4	1	1	1
INSPECTOR	58	62	53	H	M	H	3	3	3	1	1	1	4	4	3	1	1	1
ALARM OPERATOR	0	0	5	L	L	H	0	0	3	0	0	2	0	0	4	0	0	1
MECHANIC	0	11	0	L	L	L	0	3	0	0	1	0	0	3	0	0	1	0
INTERPRET ACTION OF DIFFERENT EXTINGUISHING AGENTS ON VARIOUS TYPES OF FIRES	68	67	71	H	H	H	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	92	81	91	H	H	H	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	60	60	70	M	H	H	3	3	3	1	1	1	4	4	3	1	1	1
FIREMAN	71	71	65	M	M	H	3	3	3	1	2	2	4	4	4	1	1	1
INSPECTOR	85	73	87	H	H	H	3	3	3	1	1	1	4	4	3	1	1	1
ALARM OPERATOR	0	0	9	L	L	H	0	0	3	0	0	2	0	0	4	0	0	1
MECHANIC	5	11	5	M	L	M	3	3	4	0	1	1	3	3	4	1	1	12

* IDENTIFY COMMON GASES ENCOUNTERED AT FIRES Requires a knowledge of the chemical composition of combustible materials. Involves utilizing chemical formulas in order to determine gases which may be produced by the combustion of ordinary materials under varying fire conditions. May involve utilization of electronic gas detection devices and rapid interpretation of gauge readings on such devices. The captains in all departments are required to have this knowledge for constant application. Inspectors in medium and large departments may be more involved in fire investigations than in the small department, and therefore need a familiarity with the subject.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	2	0	0	0	1	0	0	0
BASIC-GENERAL	22	9	1	4	28	19	1	12	17	6	1	1
IN-DEPTH	23	17	2	14	30	18	5	13	44	24	17	1

Statewide Advisory Committee recommendations

CAP 81 3 3CME : ENGR 63 3 4CRE : F/M 59 3 2C3C : INSP 70 3 3CME : A/O 4 0 D 1CN- : MECH 2 3 D 1CN-

* IDENTIFY EXOTIC FUELS Requires a knowledge and understanding of various types of fuel. Requires research in various manuals and practical application of the information to become familiar with the characteristics of the materials. The captains, engineers, firemen and inspectors all receive substantial training in order to be able to identify exotic fuels. The percentage of men involved in actually performing the task varies from 24 percent of the engineers in the small departments to 70 percent of the captains in the large departments.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	3	1	0	1	6	0	0	0
BASIC-GENERAL	9	4	0	2	11	8	1	2	9	5	2	2
IN-DEPTH	18	10	1	9	23	17	3	12	24	14	1	0

Statewide Advisory Committee recommendations

CAP 66 3 3CME : ENGR 44 3 3CME : F/M 31 3 2C3C : INSP 55 3 3CME : A/O 4 0 D 1CN- : MECH 1 0 D 1CN-

* INTERPRET ACTION OF DIFFERENT EXTINGUISHING AGENTS ON VARIOUS TYPES OF FIRES Knowledge and understanding are necessary in classification of fires and the requirements for extinguishment. Requires knowledge of the different agents and the type of fire for which they are designed, as well as method of application. Captains, firemen, engineers, and inspectors are all directly involved in the knowledge of this category.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	0	0	6	0	0	3	2	2	0	0
BASIC-GENERAL	21	12	2	5	21	14	2	7	18	5	2	1
IN-DEPTH	36	27	2	19	36	26	6	19	45	29	8	2

Statewide Advisory Committee recommendations

CAP 90 3 3CME : ENGR 67 3 3CME : F/M 67 3 1C3C : INSP 85 3 3CME : A/O 7 0 D 1CN- : MECH 6 3 D 1CN-

TABLE 41. RELATED CHEMISTRY CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
INTERPRET NATIONAL FIRE CODES, VOL. 1, 2, 3	23	27	19	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	42	34	18	M H H	3 3 3	1 1 1	4 3 4	1 1 1
ENGINEER	14	33	9	L H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	18	23	22	M H H	1 1 1	1 1 1	3 2 3	1 1 1
INSPECTOR	83	62	53	H H H	3 3 3	1 1 1	3 4 3	1 1 1
ALARM OPERATOR	0	0	5	L L H	0 0 3	0 0 1	0 0 2	0 0 1
MECHANIC	0	5	3	L L M	0 3 3	0 1 1	0 2 4	0 1 12
IDENTIFY CLASSES OF FIRES AS DEFINED BY THE FIRE PREVENTION CODE	53	53	61	H H H	3 3 3	1 1 1	3 4 3	1 1 1
CAPTAIN	75	74	86	H H H	3 3 3	1 1 1	3 3 4	1 1 1
ENGINEER	43	47	33	H H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	55	52	63	H M H	3 3 3	1 1 1	3 4 4	1 1 1
INSPECTOR	79	89	86	H H H	3 3 3	1 1 1	3 4 3	1 1 1
ALARM OPERATOR	2	0	13	H L H	3 0 3	1 0 1	4 0 3	1 0 1
MECHANIC	5	5	2	H L M	3 3 3	1 1 1	3 2 4	1 1 12
IDENTIFY FIRE CHARACTERISTICS OF CHEMICALS, OILS, AND PAINTS	45	43	47	H H H	3 3 3	1 1 1	3 4 4	1 1 1
CAPTAIN	70	72	88	H H M	3 3 3	1 1 1	4 4 4	1 1 1
ENGINEER	41	38	31	M H H	3 3 3	1 2 1	3 3 4	1 1 1
FIREMAN	41	37	38	M H H	3 3 3	1 1 2	3 4 3	1 1 1
INSPECTOR	77	75	79	H H H	3 3 3	1 1 1	3 4 3	1 1 1
ALARM OPERATOR	0	0	5	L L H	0 0 3	0 0 2	0 0 4	0 0 1
MECHANIC	0	5	0	L L L	0 3 0	0 1 0	0 2 0	0 1 0

- INTERPRET NATIONAL FIRE CODES VOLUMES 1-2-3 Requires constant study of the codes, standards and recommended practices for handling flammable liquids, gases, combustible solids, dusts, and explosives. Requires knowledge of their application and enforcement in the field. The inspectors in the small departments must depend upon national codes because in many cases they do not have local ordinances and codes to cover a given situation.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	6	2	1	0	2	2	0	0
BASIC-GENERAL	10	5	1	3	11	7	1	6	4	0	0	0
IN-DEPTH	11	8	2	5	9	6	4	7	13	11	2	0

Statewide Advisory Committee recommendations

CAP 24 3 3CME : ENGR 13 3 2C3C : F/M 22 1 1C2C : INSP 58 3 3C4C : A/O 4 0 D 1CN- : MECH 3 3 D 1CN-

- IDENTIFY CLASSES OF FIRE AS DEFINED BY THE FIRE PREVENTION CODE Requires knowledge and understanding of the Fire Prevention Code and the standards used for the classification of fires. The captains in large departments may have greater responsibility for training and reporting in this area than captains in small and medium departments. The inspectors in all size departments are involved with this area in their public relations and fire prevention activities, but those in medium and large departments usually have more responsibility in the area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	5	0	0	0	3	2	0	0
BASIC-GENERAL	23	11	1	5	24	11	1	5	11	4	1	1
IN-DEPTH	25	17	2	10	24	16	9	14	45	24	7	0

Statewide Advisory Committee recommendations

CAP 83 3 3CME : ENGR 36 3 3CME : F/M 60 3 1C3C : INSP 86 3 3CME : A/O 10 3 D 1C2C : MECH 3 3 D 1CN-

- IDENTIFY FIRE CHARACTERISTICS OF CHEMICALS, OILS AND PAINTS Requires knowledge of the properties of chemicals, oils, and paints--the combustibility of these substances and the effects of heat on the materials as well as methods of handling in fire control. The captains in large departments may have greater responsibility for training and reporting in this area than captains in small and medium departments. The inspectors in all size departments are involved with this area in their public relations and fire prevention activities.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	1	7	0	0	1	4	2	0	0
BASIC-GENERAL	21	10	2	6	14	11	2	8	10	5	1	2
IN-DEPTH	18	14	1	12	21	15	6	11	26	27	16	0

Statewide Advisory Committee recommendations

CAP 84 3 3CME : ENGR 33 3 3CME : F/M 38 3 1C3C : INSP 78 3 3CME : A/O 4 0 D 1CN- : MECH 1 0 D 1CN-

TABLE 41. RELATED CHEMISTRY CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
INTERPRET SPONTANEOUS IGNITION	61	58	53	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	87	78	80	H H H	3 3 3	1 1 1	3 3 4	1 1 1
ENGINEER	47	51	65	M H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	65	58	39	M H H	3 3 3	1 1 1	3 3 3	1 1 1
INSPECTOR	83	81	84	H H H	3 3 3	1 1 1	3 4 3	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	11	0	H H L	3 3 0	1 1 0	3 3 0	1 1 0
IDENTIFY HAZARDS OF DUST EXPLOSION	54	54	46	H H H	3 3 3	1 1 1	3 4 3	1 1 1
CAPTAIN	73	71	82	H H H	3 3 3	1 1 1	4 3 3	1 1 1
ENGINEER	50	48	37	L M H	3 3 3	1 1 1	4 3 3	1 1 1
FIREMAN	55	55	35	H L H	3 3 3	1 1 1	4 4 3	1 1 1
INSPECTOR	69	82	83	H H H	3 3 3	1 1 1	3 4 3	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	11	0	H M L	3 3 0	1 1 0	3 3 0	1 1 0
IDENTIFY THE EFFECT OF WATER ON FIRES I.E. CHEMICALS, STEEL, CONCRETE, BRICK, HEAVY TIMBER AND COPRA STRUCTURES, DUST PRODUCING PRODUCTS, AND VOLATILE OILS	59	65	51	H H H	3 3 3	1 1 1	3 4 3	1 1 1
CAPTAIN	86	83	90	H H H	3 3 3	1 1 1	3 3 4	1 1 1
ENGINEER	47	51	62	H H H	3 3 3	1 2 1	4 4 3	1 1 1
FIREMAN	62	69	33	H M H	3 3 3	1 1 2	4 4 4	1 1 1
INSPECTOR	65	78	80	H H H	3 3 3	1 1 1	4 4 3	1 1 1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0 0 0
MECHANIC	5	11	0	H H L	3 3 0	1 1 0	3 3 0	1 1 0

* IDENTIFY SPONTANEOUS IGNITION Involves knowledge of chemistry as it relates to fire control, and understanding of factors and types of materials that are conducive to spontaneous ignition. Approximately 80 percent of all the captains and inspectors are required to interpret spontaneous ignition as a part of their assignment. The captains perform the task at a moderate frequency in the medium and large departments and at a high frequency in the small departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	3	0	1	6	2	0	3	8	0	0	0
BASIC-GENERAL	28	13	0	4	28	14	3	9	20	9	5	1
IN-DEPTH	25	18	3	18	23	14	7	13	24	17	1	0

Statewide Advisory Committee recommendations

CAP 61 3 3CME : EMGR 61 3 3CME : F/M 45 3 1C3C : IMEP 84 3 3C4C : A/D 0 0 9 1CH- : MECH 2 3 9 1CH-

* IDENTIFY HAZARDS OF DUST EXPLOSION Requires knowledge, understanding and application of the various standards and related information to the operations involved in the handling of the materials that are conducive to dust explosions. The captains in the large departments and the inspectors in the medium and large departments face more problems in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	1	6	0	0	0	0	0	0	0
BASIC-GENERAL	17	5	1	5	19	15	1	7	22	12	0	1
IN-DEPTH	25	19	3	15	29	21	6	14	19	18	10	0

Statewide Advisory Committee recommendations

CAP 79 3 3CME : EMGR 40 3 3CME : F/M 40 3 1C3C : IMEP 81 3 3CME : A/D 0 0 9 1CH- : MECH 2 3 9 1CH-

* IDENTIFY THE EFFECTS OF WATER ON FIRES, I.E., CHEMICALS, STEEL, CONCRETE, BRICK, HEAVY TIMBER AND COMBUSTIBLE STRUCTURES, DUST PRODUCING PROCESSES, AND VOLATILE OILS Requires a knowledge and understanding of the chemistry and physics of fire, and knowledge of the expansion and contraction characteristics of various building materials due to sudden cooling. Would require knowledge of the effects of water on various types of chemicals and volatile oils of various degrees of volatility. Further understanding would be necessary of the effects of the application of water to materials that produce considerable dust, and the possible results. The captains must apply this knowledge in their daily operations and training programs. The inspectors in the medium and large departments may inspect more structures that would require use of this knowledge.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	1	4	0	0	2	0	0	0	0
BASIC-GENERAL	21	12	1	3	24	17	1	8	18	6	1	1
IN-DEPTH	28	20	5	17	32	26	7	17	30	26	7	0

Statewide Advisory Committee recommendations

CAP 89 3 3CME : EMGR 59 3 3CME : F/M 40 3 2C3C : IMEP 70 3 3CME : A/D 0 0 9 1CH- : MECH 2 3 9 1CH-

TABLE 41. RELATED CHEMISTRY CONTINUED

	MEN			FRQ		T-K		A-S		PET		N-O		
	S	M	L	S	M L	S	M L	S	M L	S	M L	S	M	L
IDENTIFY THE EFFECT OF FIRE ON STEEL, CONCRETE, BRICK, HEAVY TIMBER AND FRAME CONSTRUCTION	59	65	48	H	H H	3	3 3	1	1 1	3	3 4	1	1	1
CAPTAIN	84	75	87	H	H L	3	3 3	1	1 1	3	3 4	1	1	1
ENGINEER	47	48	36	H	M H	3	3 3	1	2 1	4	3 4	1	1	1
FIREMAN	62	74	38	M	M H	3	3 3	1	1 1	4	3 4	1	1	1
INSPECTOR	81	75	83	H	H H	3	3 3	1	1 1	3	4 3	1	1	1
ALARM OPERATOR	0	0	0	L	L L	0	0 0	0	0 0	0	0 0	0	0	0
MECHANIC	5	11	2	H	H M	3	3 3	1	1 1	3	3 4	1	1	12
IDENTIFY THE EFFECT OF FIRE ON VARIOUS COMMODITIES I.E. JUTE, LIME, ETC.	49	56	47	M	H H	3	3 3	1	1 1	3	3 4	1	1	1
CAPTAIN	72	74	84	H	H M	3	3 3	1	2 2	3	3 4	1	1	1
ENGINEER	34	40	32	H	H H	3	3 3	1	2 1	4	3 4	1	1	1
FIREMAN	53	60	38	H	M H	3	3 3	1	1 2	4	4 4	1	1	1
INSPECTOR	73	74	75	M	H H	3	3 3	1	1 1	3	4 3	1	1	1
ALARM OPERATOR	0	0	5	L	L H	0	0 3	0	0 2	0	0 2	0	0	1
MECHANIC	5	11	0	H	H L	3	3 0	1	1 0	3	3 0	1	1	0
IDENTIFY DANGEROUS REFRIGERANTS COMMONLY USED	49	57	46	H	H H	3	3 3	1	1 1	3	3 3	1	1	1
CAPTAIN	73	74	90	M	H M	3	3 3	1	1 1	3	3 4	1	1	1
ENGINEER	50	48	40	H	M H	3	3 3	1	2 1	4	3 3	1	1	1
FIREMAN	46	59	31	H	H H	3	3 3	1	2 1	3	4 4	1	1	1
INSPECTOR	67	75	80	H	M H	3	3 3	1	1 1	3	4 3	1	1	1
ALARM OPERATOR	0	0	5	L	L H	0	0 3	0	0 2	0	0 2	0	0	1
MECHANIC	0	11	0	L	H L	0	3 0	0	1 0	0	3 0	0	1	0

* IDENTIFY THE EFFECT OF FIRE ON STEEL, CONCRETE, BRICK, HEAVY TIMBER AND FRAME CONSTRUCTION Requires knowledge and understanding of the effects of fire on various building materials as they relate to possible damage as a result of fire. Also relates to building inspection and possible life hazard. In the large departments the captains are more actively engaged in pre-fire planning and training. In the small department, the captain usually has added responsibilities in this area. Inspectors in all size departments are actively engaged in this category.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	4	0	1	1	0	0	0	3	3	0	0
BASIC-GENERAL	22	12	1	4	33	20	2	11	12	6	1	1
IN-DEPTH	27	18	3	14	27	19	6	15	31	25	16	0

Statewide Advisory Committee recommendations

CAP 85 3 3CME : ENGR 39 3 3CME : F/M 46 3 1C3C : INSP 82 3 3CME : A/O 0 0 D 1CN- : MECH 4 3 D 1CN-

* IDENTIFY THE EFFECT OF FIRE ON VARIOUS COMMODITIES, I.E., BALED COTTON, JUTE, OIL (IN DRUMS), LIME, PAINTS, EXOTIC FUELS, ETC. Requires knowledge of the effects of heat and fire on certain types of commodities in relation to the way they are packaged. Requires the ability to recognize conditions that may be conducive to further damage, spread of fire, or a greater hazard. Captains in the large departments are more actively engaged in pre-fire planning and training. Inspectors in all size departments are actively engaged in this category.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	3	0	1	5	2	0	4	3	2	0	0
BASIC-GENERAL	18	10	1	4	24	19	2	9	9	3	1	1
IN-DEPTH	23	14	3	13	24	18	5	12	34	26	16	0

Statewide Advisory Committee recommendations

CAP 81 3 3CME : ENGR 33 3 3CRE : F/M 43 3 2C3C : INSP 75 3 3CME : A/O 4 0 D 1CN- : MECH 2 3 D 1CN-

* IDENTIFY DANGEROUS REFRIGERANTS COMMONLY USED and their toxic effect and fire hazard potential. Captains in the large departments are more actively engaged in pre-fire planning and training. In the medium and large departments, inspectors must work with more extensive refrigeration systems and in greater numbers.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	3	0	0	5	4	1	1	4	2	0	0
BASIC-GENERAL	19	8	1	5	23	17	2	4	11	3	1	0
IN-DEPTH	19	12	1	10	24	18	5	12	28	25	16	1

Statewide Advisory Committee recommendations

CAP 86 3 3CME : ENGR 42 3 3CME : F/M 37 3 2C3C : INSP 78 3 3CME : A/O 4 0 D 1C2C : MECH 1 0 D 1CN-

TABLE 42. VELOCITY OF FLOW

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE VELOCITY WHEN HEAD, PRESSURE, OR FLOW IS KNOWN	50	55	38	H M M	3 3 3	1 1 1	3 4 4	1	1	1
CAPTAIN	47	54	42	H M M	3 3 3	1 1 1	4 4 4	1	1	1
ENGINEER	82	87	70	H M H	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	44	51	26	M M H	3 3 3	1 1 2	3 4 4	1	1	12
INSPECTOR	6	11	22	H H H	3 3 3	1 1 1	3 4 3	1	2	2
ALARM OPERATOR	6	0	0	L L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	18	26	5	H L M	3 3 3	1 1 2	3 3 4	1	1	12
DETERMINE FLOW WHEN VELOCITY IS KNOWN	50	55	37	H M M	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	42	52	42	H M L	3 3 3	1 1 1	4 4 4	1	1	1
ENGINEER	82	87	66	H M H	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	46	52	26	M M H	3 3 3	1 2 2	4 4 4	1	1	12
INSPECTOR	6	12	22	H H M	3 3 3	1 1 1	3 4 3	12	2	2
ALARM OPERATOR	6	0	0	L L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	18	26	7	H L M	3 3 3	1 1 2	3 3 4	1	1	1
DETERMINE VELOCITY OF FLOW IN ONE CARRIER WHEN THE VELOCITY OF FLOW IN ANOTHER CARRIER IS KNOWN	40	40	24	M H M	3 3 3	1 1 2	3 4 4	1	1	1
CAPTAIN	32	24	36	H M L	3 3 3	1 1 1	4 4 4	1	1	1
ENGINEER	62	61	55	H H H	3 3 3	1 2 2	4 4 4	1	1	1
FIREMAN	39	43	9	M M M	3 3 3	1 2 2	4 4 4	1	1	12
INSPECTOR	6	12	22	H H M	3 3 3	1 1 1	3 4 3	12	2	2
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	9	21	6	H H M	3 3 3	2 1 2	4 4 4	124	1	1

* DETERMINE VELOCITY WHEN HEAD, PRESSURE, OR FLOW IS KNOWN Requires knowledge of and ability to use mathematics and conversion of formulas. The engineer is predominantly assigned to this task. Considerable in-depth preparation for the rank of fireman through captain is provided within each fire department. The frequency of performance is generally moderate throughout all ranks and departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	0	3	1	0	2	2	0	0	0
BASIC-GENERAL	19	13	1	11	18	14	1	10	8	4	2	2
IN-DEPTH	22	19	1	17	31	23	6	21	20	26	0	1

Statewide Advisory Committee recommendations

CAP 44 3 3DRE : ENGR 74 3 3DRE : F/M 32 3 1A2D : INSP 19 3 3DRE : A/O 1 0 D 1AN- : MECH 9 3 L 1A2D

* DETERMINE FLOW WHEN VELOCITY IS KNOWN Requires knowledge of and ability to use mathematics and formulas. The engineer is predominantly assigned to this task. Considerable in-depth preparation for the rank of fireman through captain is provided within each fire department. The frequency of performance is generally moderate throughout all ranks and departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	0	2	2	0	2	2	2	0	0
BASIC-GENERAL	17	11	1	8	15	12	1	8	8	4	2	1
IN-DEPTH	25	18	1	18	33	22	8	21	19	26	0	1

Statewide Advisory Committee recommendations

CAP 43 3 3DN- : ENGR 71 3 3DRE : F/M 32 3 1A2D : INSP 19 3 3DRE : A/O 1 0 D 1AN- : MECH 11 3 L 2A2D

* DETERMINE VELOCITY OF FLOW IN ONE CARRIER WHEN THE VELOCITY OF FLOW IN ANOTHER CARRIER IS KNOWN Requires knowledge and ability to use mathematics and equations. The engineer in all departments makes this determination at a high frequency. The captains, engineers and firemen all receive in-depth training in this task. Within the large departments, only a small percentage of the firemen are assigned to this task whereas nearly half of the firemen are involved in this task in the small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	2	0	0	2	2	0	2	0	0	0	0
BASIC-GENERAL	15	10	1	8	8	8	1	6	4	4	2	1
IN-DEPTH	20	15	1	13	27	19	6	17	10	16	0	1

Statewide Advisory Committee recommendations

CAP 34 3 3DRE : ENGR 57 3 3DME : F/M 18 3 1A2D : INSP 19 3 3DRE : A/O 0 0 D 1AN- : MECH 8 3 L 2DMB

TABLE 42. VELOCITY OF FLOW CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE WATER HAMMER CAUSE AND EFFECT	54	55	49	M H H	3 3 3	1 1 1	3 4 3	1	1	1
CAPTAIN	56	53	43	M H M	3 3 3	1 1 1	4 3 4	1	1	1
ENGINEER	78	72	76	M H H	3 3 3	1 2 1	4 4 3	1	1	1
FIREMAN	51	57	45	M H H	3 3 3	1 1 1	3 4 4	1	1	1
INSPECTOR	13	12	22	H H H	3 3 3	1 1 1	3 4 3	1	2	12
ALARM OPERATOR	6	0	0	L L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	18	26	8	H H M	3 3 5	1 1 2	3 3 4	1	1	1

* DETERMINE WATER HAMMER CAUSE AND EFFECT Requires knowledge and understanding of the effects of the sudden stopping of moving water, and possible results. A larger percentage of engineers are involved in this task than any of the other ranks. The frequency of performance, however, in the small departments is predominantly moderate while all other departments reflect a high frequency rate.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	2	2	2	0	2	0	0	0	0
BASIC-GENERAL	24	13	1	11	20	11	1	8	14	7	2	2
IN-DEPTH	25	16	1	14	32	21	8	19	27	32	0	1

Statewide Advisory Committee recommendations

CAP 46 3 3DRE : ENGR 76 3 4DRE : F/M 49 3 1A3D : INSP 19 3 3DRE : A/O 1 0 D 1AN- : MECH 12 3 2D3D

TABLE 43. FRICTION LOSS

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE FRICTION LOSS IN HOSE	54	66	28	M	M	H	3	3	3	2	2	2	3	4	4	1	1	12
CAPTAIN	61	62	71	H	M	H	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	94	93	78	H	H	H	3	3	3	2	2	2	4	4	4	1	1	1
FIREMAN	54	66	28	M	M	H	3	3	3	2	2	2	3	4	4	1	1	2
INSPECTOR	10	6	20	H	M	M	3	3	3	1	1	1	3	4	3	1	0	123
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	27	26	6	H	H	M	3	3	3	1	1	2	4	3	4	1	1	1
DETERMINE FLOW WHEN FRICTION LOSS IS KNOWN	57	60	40	H	H	H	3	3	3	1	2	2	4	4	4	1	1	1
CAPTAIN	54	56	44	H	M	L	3	3	3	1	1	1	4	4	4	1	1	1
ENGINEER	85	91	78	H	H	H	3	3	3	2	2	2	4	4	4	1	1	1
FIREMAN	54	59	27	H	M	M	3	3	3	1	2	2	4	4	4	1	1	12
INSPECTOR	10	5	22	H	M	H	3	3	3	1	1	1	3	4	3	1	12	1
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	2	0	0	4	0	0	124	0	0
MECHANIC	27	26	6	H	H	M	3	3	3	1	1	2	4	3	4	1	1	1
DETERMINE FRICTION FACTORS	56	60	39	H	H	H	3	3	3	1	2	2	4	4	4	1	1	1
CAPTAIN	50	56	43	M	M	L	3	3	3	1	1	1	4	4	4	1	1	1
ENGINEER	88	88	70	H	H	H	3	3	3	2	2	2	4	4	3	1	1	1
FIREMAN	52	59	27	H	M	H	3	3	3	2	2	2	3	4	4	1	1	12
INSPECTOR	12	6	24	H	M	H	3	3	3	1	1	1	3	4	3	1	12	1
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	2	0	0	3	0	0	14	0	0
MECHANIC	23	26	6	H	H	M	3	3	3	2	1	2	4	3	4	1	1	1

* DETERMINE FRICTION LOSS IN HOSE Requires knowledge and understanding of hose construction, mathematics, formulas, and the fundamental rules governing friction. Engineers in the small and medium size departments have fewer prepared charts and tables to depend upon. The engineer in the large department may work more with standardized and set formulas. The fireman in small and medium departments may be required to serve as acting engineer.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	1	0	0	0	0	3	2	0	0
BASIC-GENERAL	20	11	1	9	17	10	0	10	6	4	2	1
IN-DEPTH	34	23	1	20	46	35	9	29	34	28	9	2

Statewide Advisory Committee recommendations

CAP 68 3 3DRE : ENGR 82 3 4DME : F/M 37 3 1A3D : INSP 17 3 L 2DN- : A/O 10 D 1AN- : MECH 11 3 L 1A2D

* DETERMINE FLOW WHEN FRICTION LOSS IS KNOWN Requires knowledge and understanding plus the ability to use mathematics and apply formulas. Engineers in the small and medium size departments may have fewer prepared charts and tables to depend upon while the engineer in the large department may work with standardized and set formulas. The fireman in small and medium departments may be required to serve as acting engineer.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	3	0	2	1	0	0	0	1	0	0	0
BASIC-GENERAL	17	9	1	9	17	13	1	9	7	5	2	1
IN-DEPTH	31	21	1	18	34	29	7	26	24	29	9	2

Statewide Advisory Committee recommendations

CAP 47 3 3DN- : ENGR 82 3 4DME : F/M 35 3 1A3D : INSP 18 3 3DRE : A/O 1 0 D 1AN- : MECH 12 3 L 2A3D

* DETERMINE FRICTION FACTORS Requires knowledge of principles of mathematics and ability to apply them in a given situation. Engineers in the small and medium size departments may have fewer prepared charts and tables to depend upon; consequently, they must be able to compute these factors. This requires more self preparation and education than for engineers in large departments. The fireman in small and medium size departments may be required to serve as acting engineer.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	2	2	2	0	2	3	0	0	0
BASIC-GENERAL	21	9	1	10	15	11	0	7	6	3	1	1
IN-DEPTH	30	22	1	18	37	30	7	25	20	26	10	2

Statewide Advisory Committee recommendations

CAP 46 3 3DRE : ENGR 75 3 4DME : F/M 35 3 1A3D : INSP 20 3 3DRE : A/O 1 0 D 1AN- : MECH 11 3 L 1A2D

TABLE 43. FRICTION LOSS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE FRICTION LOSS IN HYDRANTS, PIPE, AND WATER MAIN	45	38	19	H M H	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	40	31	38	L L L	3 3 3	1 1 1	4 4 4	1	1	1
ENGINEER	71	53	32	H M H	3 3 3	1 2 1	4 4 4	1	1	1
FIREMAN	41	39	6	M M H	3 3 3	1 2 2	3 4 4	1	12	12
INSPECTOR	10	12	44	H H H	3 3 3	1 1 1	3 4 4	12	12	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	23	16	7	H H M	3 3 5	2 1 2	4 3 4	1	1	12
DETERMINE FRICTION LOSS IN STANDPIPES AND SPRINKLER SYSTEMS AND OTHER APPLIANCES	50	51	45	H M H	3 3 3	1 2 2	4 4 4	1	1	1
CAPTAIN	49	41	69	L M H	3 3 3	1 1 2	4 4 4	1	1	1
ENGINEER	75	76	73	M M H	3 3 3	1 2 2	4 4 4	1	1	1
FIREMAN	45	52	26	M M H	3 3 3	1 2 2	4 4 4	1	1	12
INSPECTOR	13	28	44	H M H	3 3 3	1 1 1	3 4 3	1	2	1
ALARM OPERATOR	6	0	0	L L L	3 0 0	2 0 0	3 0 0	12	0	0
MECHANIC	23	16	5	H H M	3 3 3	2 1 2	4 3 4	1	1	12

• DETERMINE FRICTION LOSS IN HYDRANTS, PIPE, AND WATER MAIN Requires knowledge of hydraulic principles as they relate to roughness coefficient of hydrants and the gallons per minute flow from the hydrant. Requires knowledge of the size and length of the water main serving the hydrant and methods of flow testing. The engineer and mechanic in the small department may be more frequently required to make hydrant flow tests. The inspector in the larger department would be required to do more of this work because of the greater complexity of his district.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	0	2	0	2	2	2	0	0
BASIC-GENERAL	17	7	1	4	9	7	1	4	6	3	1	1
IN-DEPTH	23	16	2	15	24	18	6	19	9	8	0	1

Statewide Advisory Committee recommendations

CAP 37 3 3SME : EMGR 40 3 4SME : F/M 15 3 L 1A3D : IREP 35 3 3DAD : A/O 0 0 D 1AN- : MECH 10 3 D 1AN-

• DETERMINE FRICTION LOSS IN STAND-PIPES AND SPRINKLER SYSTEMS AND OTHER APPLIANCES Requires knowledge of mathematics, conversion factors, how to use these factors, and application of principles. Captains in large departments usually have more of these appliances in their districts and must keep their companies trained in working with these systems. The inspector in the large department is more involved in this area because of the nature of his district.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	1	1	0	0	0	1	0	0	0
BASIC-GENERAL	18	10	1	7	13	9	1	7	8	5	2	1
IN-DEPTH	27	18	1	15	35	29	6	22	28	34	9	2

Statewide Advisory Committee recommendations

CAP 63 3 3SME : EMGR 74 3 4SME : F/M 32 3 L 1A3D : IREP 38 3 3DAD : A/O 1 0 D 1AN- : MECH 9 3 D 1AN-

TABLE 44. ENGINE AND NOZZLE PRESSURE

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE ENGINE OR NOZZLE PRESSURE	58	63	46	H H H	3 3 3	2 2 2	4 4 4	1	1	1
CAPTAIN	53	59	72	H H H	3 3 3	1 2 2	4 4 4	1	1	1
ENGINEER	94	92	81	H H H	3 3 3	2 2 2	4 4 4	1	1	1
FIREMAN	53	63	25	H M H	3 3 3	2 2 2	4 4 4	1	1	1
INSPECTOR	4	6	20	H M M	3 3 3	1 1 1	3 4 3	1	12	123
ALARM OPERATOR	6	0	0	M L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	36	32	6	H L M	3 3 3	1 1 2	4 3 4	1	1	1
DETERMINE EP BY MENTAL CALCULATION	57	63	46	H H H	3 3 3	2 2 2	4 4 4	1	1	1
CAPTAIN	55	59	72	H H H	3 3 3	1 2 2	4 4 4	1	1	1
ENGINEER	91	92	81	H H H	3 3 3	2 2 2	4 4 4	1	1	1
FIREMAN	51	63	25	H M H	3 3 3	2 2 2	4 4 4	1	1	1
INSPECTOR	2	6	20	H M M	3 3 3	1 1 1	3 4 3	14	12	123
ALARM OPERATOR	6	0	0	L L L	3 0 0	2 0 0	4 0 0	12	0	0
MECHANIC	23	21	6	H H M	3 3 3	2 1 2	4 4 4	1	1	1
DETERMINE DIAMETER OF NOZZLE EQUIVALENT	53	61	39	H M H	3 3 3	1 1 2	4 4 4	1	1	1
CAPTAIN	48	50	41	H H M	3 3 3	1 1 2	4 4 4	1	1	1
ENGINEER	91	92	72	H H H	3 3 3	2 2 2	4 4 4	1	1	1
FIREMAN	44	63	27	M M H	3 3 3	2 2 2	4 4 4	1	1	12
INSPECTOR	2	6	20	H M M	3 3 3	1 1 1	3 4 3	14	12	123
ALARM OPERATOR	6	0	0	L L L	3 0 0	2 0 0	3 0 0	14	0	0
MECHANIC	32	21	6	H H M	3 3 3	1 1 2	4 4 4	1	1	1

* DETERMINE ENGINE OR NOZZLE PRESSURE Requires the knowledge, understanding and use of formulas as they apply to hydraulics related to the fire service. Captains in large departments usually have more of these appliances in their districts and must keep their companies trained in working with these systems. The fireman in the medium and small department must be informed in this area as he is likely to serve as acting engineer. Mechanics are directly involved in the testing of pumping equipment in the small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	3	0	1	1	0	0	0	1	0	0	0
BASIC-GENERAL	16	9	1	9	17	13	0	10	5	4	2	1
IN-DEPTH	32	23	1	20	45	33	8	26	38	20	6	2

Statewide Advisory Committee recommendations

CAP 68 3 3DRE : ENGR 84 3 4DRE : F/M 31 3 1A3D : INSP 16 3 D 3DRE : A/O 1 0 D 1AN- : MECH 13 3 2D3D

* DETERMINE ENGINE PRESSURE BY MENTAL CALCULATION Requires knowledge and application of predetermined factors and formulas that have been learned and are applied by mental calculation. Captains in large departments must keep their men trained in this area. The fireman in the medium and small department must be informed in this area as he is likely to serve as acting engineer. Mechanics in small and medium departments are directly involved in testing the equipment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	3	1	0	0	0	1	0	0	0
BASIC-GENERAL	15	8	0	9	17	13	0	9	5	4	2	1
IN-DEPTH	32	21	1	21	45	33	7	25	38	21	6	3

Statewide Advisory Committee recommendations

CAP 68 3 3DRE : ENGR 84 3 4DRE : F/M 33 3 1A3D : INSP 16 3 D 3DRE : A/O 1 0 D 1AN- : MECH 10 3 L 1A2D

* DETERMINE DIAMETER OF NOZZLE EQUIVALENT Involves knowledge and understanding of the use of prepared tables as well as methods of computation of circular areas for comparison when tables are not available. Small and medium departments are likely to use more small lines than the large departments. Also, they may have fewer prepared charts and tables to depend upon. Mechanics in the medium and small departments are more directly involved in the testing of pumping equipment than those in large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	3	4	2	0	2	3	2	0	0
BASIC-GENERAL	16	10	0	9	15	8	1	7	5	3	2	1
IN-DEPTH	30	21	1	18	39	33	7	25	22	26	0	3

Statewide Advisory Committee recommendations

CAP 43 3 3DRE : ENGR 77 3 4DRE : F/M 34 3 1A3D : INSP 16 3 D 3DRE : A/O 1 0 D 1AN- : MECH 12 3 D 1A2D

TABLE 44. ENGINE AND NOZZLE PRESSURE CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE K FACTORS	42	47	42	M	L	M	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	38	40	64	M	L	M	3	3	3	1	1	1	4	4	4	1	1	1
ENGINEER	73	72	66	M	L	H	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	35	47	27	M	M	H	3	3	3	1	1	2	4	4	4	2	1	12
INSPECTOR	0	6	20	L	M	M	0	3	3	0	1	1	0	4	3	0	12	123
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	23	16	6	H	H	M	3	3	3	1	1	2	4	4	4	1	1	1

* DETERMINE K FACTORS Involves knowledge of mathematics and mathematical expressions. Captains in large departments must keep their men trained in this area. Firemen in the medium and small departments must be informed in this area as they are likely to serve as acting engineer. Mechanics are directly involved in the testing of equipment in small and medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	2	3	0	0	0	2	0	0	0
BASIC-GENERAL	11	9	0	7	13	14	1	11	5	4	2	1
IN-DEPTH	22	17	1	13	26	24	6	18	28	31	15	3

Statewide Advisory Committee recommendations

CAP 57 3 3DRE : ENGR 68 3 4DRE : F/M 30 3 1A3D : INSP 16 3 D 3DRE: A/O 0 0 D 1AN- : MECH 10 3 D 1A2D

TABLE 45. DISCHARGE

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE DISCHARGE WHEN PRESSURE IS KNOWN	57	64	44	H	M	H	3	3	3	1	1	2	4	4	4	1	1	1
CAPTAIN	54	60	52	M	H	H	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	93	90	82	H	H	H	3	3	3	2	2	2	4	4	4	1	1	1
FIREMAN	50	66	28	H	M	M	3	3	3	2	1	2	4	4	4	1	1	12
INSPECTOR	10	8	41	H	H	H	3	3	3	1	1	1	3	4	3	14	12	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	27	32	16	H	H	M	3	3	3	1	1	1	4	3	3	1	1	1
DETERMINE DIAMETER OF NOZZLE WHEN DISCHARGE AND PRESSURE ARE KNOWN	50	47	43	H	M	H	3	3	3	1	1	2	4	4	4	1	1	1
CAPTAIN	42	38	60	M	M	H	3	3	3	1	1	2	4	4	4	1	1	1
ENGINEER	77	65	72	L	H	H	3	3	3	1	2	1	4	4	4	1	1	1
FIREMAN	50	51	27	M	M	H	3	3	3	2	1	2	4	4	4	1	1	1
INSPECTOR	2	8	20	H	H	M	3	3	3	1	1	1	3	4	3	14	12	123
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	23	21	14	H	H	M	3	3	3	2	1	1	4	3	3	1	1	1
DETERMINE DISCHARGE FROM SPRINKLER SYSTEM	49	59	46	M	M	M	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	41	49	72	L	L	M	3	3	3	1	1	2	4	3	4	1	1	1
ENGINEER	83	80	75	L	M	M	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	42	63	26	M	M	H	3	3	3	2	1	2	4	4	4	1	1	12
INSPECTOR	29	25	44	M	M	H	3	3	3	1	1	1	3	4	3	1	2	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	18	16	7	H	H	H	3	3	3	1	1	2	4	3	4	1	1	1

* DETERMINE DISCHARGE WHEN PRESSURE IS KNOWN Involves knowledge, understanding and computation of hydraulic formulas as they relate to pumps and pumping equipment. The inspector in a large department may become more involved in the testing of private water supplies. Primarily a task performed by the engineers.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	3	1	2	0	2	2	2	0	0
BASIC-GENERAL	18	11	0	11	14	10	0	6	7	4	2	1
IN-DEPTH	30	22	1	20	43	30	7	23	31	24	1	3

Statewide Advisory Committee recommendations

CAP 53 3 3DRE : ENGR 85 3 4DRE : F/M 36 3 1A3D : INSP 33 3 3DRE : A/O 0 0 D 1AN- : MECH 20 3 L 2D3D

* DETERMINE DIAMETER OF NOZZLE WHEN DISCHARGE AND PRESSURE ARE KNOWN Involves knowledge and understanding of mathematics and mathematical procedures. Requires application of mathematical procedures for transposing formulas and calculations. The captains in large departments may be more involved in the training of the members of the company.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	0	2	2	2	0	2	0	0	0	0
BASIC-GENERAL	16	9	0	8	8	5	0	5	5	4	2	1
IN-DEPTH	27	20	1	18	32	23	6	19	28	32	6	3

Statewide Advisory Committee recommendations

CAP 55 3 3DRE : ENGR 72 3 4DRE : F/M 33 3 1A3D : INSP 16 3 D 3DRE : A/O 0 0 D 1AN- : MECH 16 3 D 1A2D

* DETERMINE DISCHARGE FROM SPRINKLER SYSTEM Requires knowledge and application of mathematical functions as they relate to formulas. The captains in large departments may be more involved in the training of the members of their companies. The inspector in a large department may become more involved in the testing of private water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	4	0	2	3	4	0	4	3	2	0	0
BASIC-GENERAL	11	8	1	6	16	14	1	10	7	5	2	1
IN-DEPTH	29	19	1	18	34	26	7	20	32	27	6	2

Statewide Advisory Committee recommendations

CAP 65 3 3DRE : ENGR 77 3 4DME : F/M 33 3 1A3D : INSP 40 3 3D4B : A/O 0 0 D 1AN- : MECH 10 3 D 1AN-

TABLE 45. DISCHARGE CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE COEFFICIENT FOR DISCHARGE	41	34	19	H M M	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	37	21	41	L H M	3 3 3	1 1 1	4 4 4	1	1	1
ENGINEER	58	52	25	H H M	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	41	37	9	L M M	3 3 3	2 1 2	4 4 4	1	1	12
INSPECTOR	0	8	39	L H H	0 3 3	0 1 1	0 4 3	0	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	18	16	6	H H M	3 3 3	1 1 2	4 3 4	1	1	1
DETERMINE PUMP DISCHARGE AT VARIOUS PRESSURES	54	59	36	H H H	3 3 3	1 1 2	4 4 4	1	1	1
CAPTAIN	49	53	70	L M M	3 3 3	1 1 2	4 4 4	1	1	1
ENGINEER	93	89	74	H H H	3 3 3	2 2 2	4 4 4	1	1	1
FIREMAN	47	59	9	M M M	3 3 3	2 1 2	4 4 4	1	1	12
INSPECTOR	2	8	20	H H M	2 3 3	1 1 1	2 4 3	2	12	123
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	27	32	6	H L M	3 3 3	1 1 2	4 3 4	1	1	1

* DETERMINE COEFFICIENT FOR DISCHARGE Requires knowledge and understanding of physics as it relates to the mechanics of fluids at rest and in motion. Involves applying mathematical computation to various laws governing fluids at rest and in motion. The captains in large departments may be more involved in the training of the members of their companies. Engineers in the small and medium departments are more involved in testing water supplies; also, they may have fewer prepared charts and tables. Inspectors in the large departments may become more involved in the testing of water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	0	0	0	0	2	2	0	0
BASIC-GENERAL	12	8	1	6	10	8	0	8	5	3	2	1
IN-DEPTH	23	18	1	13	21	16	5	13	10	9	0	2

Statewide Advisory Committee recommendations

CAP 38 3 3DN- : ENGR 33 3 3DME : F/M 17 3 1A3D : INSP 30 3 L 3DME : A/O 0 0 D 1AN- : MECH 9 3 D 1A2D

* DETERMINE PUMP DISCHARGE AT VARIOUS PRESSURES Involves knowledge of mathematics and application as related to hydraulics and pumping equipment. The captains in large departments may be more involved in the training of the members of their companies. Engineers in the small and medium departments are more involved in testing water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	2	1	2	0	2	0	0	0	0
BASIC-GENERAL	16	8	1	9	15	9	0	7	5	4	3	1
IN-DEPTH	32	21	1	18	39	31	7	25	27	16	5	3

Statewide Advisory Committee recommendations

CAP 65 3 3DRE : ENGR 78 3 4DME : F/M 20 3 1A3D : INSP 16 3 D 3DRE : A/O 0 0 D 1AN- : MECH 12 3 L 1A2D

TABLE 46. STREAM RANGE

	MEN			FRQ		T-K		A-S		PET		W-D		
	S	M	L	S	M L	S	M L	S	M L	S	M L	S	M	L
DETERMINE HORIZONTAL AND VERTICAL RANGE	42	53	39	L	M H	3	3 3	1	1 2	4	4 4	1	1	1
CAPTAIN	46	49	50	L	H M	3	3 3	1	1 1	3	4 4	1	1	1
ENGINEER	72	81	73	H	H H	3	3 3	1	1 1	4	4 4	1	1	1
FIREMAN	34	52	26	L	M H	3	3 3	1	1 2	4	4 4	1	1	12
INSPECTOR	4	6	0	L	M L	3	3 0	1	1 0	4	4 0	12	12	0
ALARM OPERATOR	0	0	0	L	L L	0	0 0	0	0 0	0	0 0	0	0	0
MECHANIC	14	11	5	H	H M	3	3 3	2	1 2	4	3 4	1	1	12
DETERMINE NP FOR HORIZONTAL AND VERTICAL RANGE	42	45	39	H	M H	3	3 3	1	1 1	4	4 4	1	1	1
CAPTAIN	41	39	48	L	M H	3	3 3	1	1 1	3	4 4	1	1	1
ENGINEER	73	79	70	H	M H	3	3 3	1	1 1	4	4 4	1	1	1
FIREMAN	34	41	26	L	M H	3	3 3	2	1 2	4	4 4	1	1	12
INSPECTOR	4	6	0	L	M L	3	3 0	1	1 0	4	4 0	12	12	0
ALARM OPERATOR	0	0	0	L	L L	0	0 0	0	0 0	0	0 0	0	0	0
MECHANIC	14	11	5	H	H M	3	3 3	2	1 2	4	3 4	1	1	12
DETERMINE SAFE WORKING PRESSURES AS RELATED TO NOZZLE SIZE	51	55	46	H	H H	3	3 3	2	2 2	4	4 4	1	1	1
CAPTAIN	57	56	75	M	H H	3	3 3	1	2 2	3	4 4	1	1	1
ENGINEER	90	79	75	H	H H	3	3 3	2	2 2	4	4 4	1	1	1
FIREMAN	38	54	27	L	M H	3	3 3	2	1 2	4	4 4	1	1	12
INSPECTOR	4	6	0	L	M L	3	3 0	1	1 0	4	4 0	12	12	0
ALARM OPERATOR	6	0	0	L	L L	3	0 0	2	0 0	3	0 0	1	0	0
MECHANIC	14	11	5	H	H M	3	3 3	2	1 2	4	3 4	1	1	12

* DETERMINE HORIZONTAL AND VERTICAL RANGE Involves knowledge of several factors that affect a fire stream, all within the control of the operator. Requires interpretation and application of formulas. This task is predominantly an engineer's assignment and he performs it at a high frequency. A very small percentage of inspectors in small and medium size departments perform this task and they received training in depth within the fire department and at a local junior college. In large departments, no inspectors are involved in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	4	3	4	0	4	0	0	0	0
BASIC-GENERAL	14	7	1	7	16	12	1	8	6	4	2	1
IN-DEPTH	20	17	1	12	30	22	6	19	24	24	9	2

Statewide Advisory Committee recommendations

CAP 50 3 3DRE : ENGR 74 3 4DRE : F/M 30 3 1A3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 7 3 D 1AN-

* DETERMINE NOZZLE PRESSURE FOR HORIZONTAL AND VERTICAL RANGE Requires knowledge of basic geometry for the estimation of distance and degrees of angle. It calls for the application of mathematical principles and formulas for conclusion. Captains and engineers in all departments make this determination at a higher frequency than any other rank. A very small percentage of inspectors in small and medium departments perform this task and receive training in depth in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	3	2	0	0	0	0	0	0
BASIC-GENERAL	13	9	1	8	12	9	0	4	6	4	2	1
IN-DEPTH	21	17	1	13	28	22	6	21	23	23	9	1

Statewide Advisory Committee recommendations

CAP 46 3 3DRE : ENGR 72 3 4DRE : F/M 29 3 1A3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 7 3 D 1AN-

* DETERMINE SAFE WORKING PRESSURE AS RELATED TO NOZZLE SIZE Necessitates knowledge of nozzle sizes and application of mathematical principles as they relate to formulas. The engineer in the small department may be required to act as captain more frequently than the engineer in medium and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	2	2	2	0	2	2	0	0	0
BASIC-GENERAL	16	8	1	7	12	10	0	6	8	4	1	1
IN-DEPTH	29	20	1	15	38	27	7	24	34	27	6	2

Statewide Advisory Committee recommendations

CAP 70 3 3DRE : ENGR 78 3 4DME : F/M 32 3 1A3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 7 3 D 1A2D

TABLE 46. STREAM RANGE CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
DETERMINE ONE SIDE OF RIGHT ANGLE TRIANGLE	35	44	34	L M H	3 3 3	1 1 1	3 4 4	1	1	1
CAPTAIN	37	32	45	L M M	3 3 3	1 1 1	3 4 4	1	1	1
ENGINEER	61	68	37	L L H	3 3 3	1 1 1	3 4 4	1	1	1
FIREMAN	27	46	32	H M H	3 3 3	1 1 1	4 4 4	2	1	1
INSPECTOR	0	6	0	L M L	0 3 0	0 1 0	0 4 0	0	12	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	11	3	H H L	3 3 3	2 1 2	4 3 4	1	1	1
DETERMINE ANGLE OF PENETRATION	34	44	31	H M M	3 3 3	1 1 2	3 4 4	1	1	1
CAPTAIN	38	46	50	L H M	3 3 3	1 1 2	3 4 4	1	1	1
ENGINEER	58	64	23	H H M	3 3 3	1 1 1	4 4 4	1	1	1
FIREMAN	27	43	30	L M M	3 3 3	2 2 1	4 4 4	1	1	1
INSPECTOR	0	6	0	L M L	0 3 0	0 1 0	0 4 0	0	12	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	5	3	H L L	3 3 3	2 1 2	4 3 4	1	1	1
DETERMINE WIDTH OF BRACING NECESSARY FOR GIVEN NOZZLE REACTION	26	18	19	H H H	3 3 3	1 1 2	3 4 4	1	1	1
CAPTAIN	29	21	47	H H H	3 3 3	1 2 2	3 4 4	1	1	1
ENGINEER	24	36	16	L H H	3 3 3	1 1 2	4 3 4	1	1	14
FIREMAN	30	13	10	H H H	3 3 3	2 2 2	4 4 4	1	1	12
INSPECTOR	0	6	0	L M L	0 3 0	0 1 0	0 4 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	14	11	3	H L L	3 3 3	2 1 2	4 3 4	1	1	12

* DETERMINE ONE SIDE OF A RIGHT ANGLE TRIANGLE Calls for a working knowledge of geometry and the application of mathematical principles. A larger percentage of engineers in small and medium size departments are required to act in this capacity, but at less frequent intervals.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	3	5	0	4	4	1	0	0
BASIC-GENERAL	13	9	1	6	10	7	0	6	6	4	2	1
IN-DEPTH	14	14	1	10	26	19	9	14	20	19	0	1

Statewide Advisory Committee recommendations
CAP 42 3 3DRE : ENGR 45 3 3DME : F/M 33 3 1A3D : INSP 1 0 L 2DME : A/O 0 0 D 1AN- : MECH 5 3 D 1A2D

* DETERMINE ANGLE OF PENETRATION Involves knowledge of building construction, geometry and applied mathematics. The engineer in small and medium size departments may be required to act as captain more often than in the large department. It is accomplished at moderate rates of frequency in large departments.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	1	0	0	0	0	1	0	0	0
BASIC-GENERAL	12	8	1	5	14	10	0	7	5	4	2	1
IN-DEPTH	17	12	1	8	28	16	5	16	22	22	0	2

Statewide Advisory Committee recommendations
CAP 48 3 3DRE : ENGR 33 3 4DRE : F/M 31 3 1A3D : INSP 1 0 D 2DN- : A/O 0 0 D 1AN- : MECH 5 3 D 1AN-

* DETERMINE WIDTH OF BRACING NECESSARY FOR GIVEN NOZZLE REACTION Necessitates a working knowledge of stress and strain principles as well as relative strength of materials. It would also require knowledge of rigging principles and an understanding of principles of reaction due to velocity and pressure. On the average, less than 30 percent of all the ranks in all departments perform this task, but it is performed at a generally high rate of frequency. This would indicate that some specialty assignment might be involved.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	0	0	0	0	0	0	0	0
BASIC-GENERAL	10	5	0	2	7	4	0	2	6	5	1	2
IN-DEPTH	9	10	1	3	10	7	4	6	10	9	0	1

Statewide Advisory Committee recommendations
CAP 41 3 3DRE : ENGR 20 3 3DME : F/M 13 3 1A3D : INSP 1 0 D 2DN- : A/O 0 0 D 1AN- : MECH 5 3 D 1AN-

TABLE 46. STREAM RANGE CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE MAXIMUM HEIGHT NOZZLE CAN BE SET FOR SAFE OPERATION	32	33	25	H	H	H	3	3	3	1	1	2	4	4	4	1	1	1
CAPTAIN	37	39	51	H	H	H	3	3	3	1	2	2	3	4	4	1	1	1
ENGINEER	39	30	32	L	H	H	3	3	3	1	2	1	4	4	4	1	1	1
FIREMAN	34	36	13	L	M	M	3	3	3	2	1	2	4	4	4	1	1	1
INSPECTOR	0	6	0	L	M	L	0	3	0	0	1	0	0	4	0	0	12	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	11	3	H	L	L	3	3	3	2	1	2	4	3	4	1	1	1

* DETERMINE MAXIMUM HEIGHT NOZZLE CAN BE SET FOR SAFE OPERATION Requires knowledge and understanding of the principles of reaction as related to pressure. A basic understanding of geometry is also required to be able to apply the principles of pressure and reaction calculations to the angle of elevation. Engineers and firemen in small departments perform this task at a low rate of frequency. Firemen in medium and large departments perform this task at a moderate rate, whereas captains in all departments perform it at a high rate of frequency.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	1	0	0	0	0	1	0	0	0
BASIC-GENERAL	11	5	1	4	7	5	0	3	10	6	1	1
IN-DEPTH	17	14	1	8	21	12	5	10	11	9	0	2

Statewide Advisory Committee recommendations

CAP 48 3 3DRE : ENGR 33 3 4DME : F/M 19 3 1A3D : INSP 1 0 D 2DN- : A/O 0 0 D 1AN- : MECH 5 3 D 1A2D

TABLE 47. PUMPING AND RELAYING

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
LIFT WATER WITH PUMP	54	58	40	L L L	3 3 3	1 1 2	4 4 4	1	1	1
CAPTAIN	47	48	43	H L L	3 3 3	1 1 2	3 4 4	1	1	1
ENGINEER	88	86	90	M L M	3 3 3	1 1 2	4 4 4	1	1	1
FIREMAN	48	60	22	L L H	3 3 3	1 2 1	4 4 4	1	1	1
INSPECTOR	6	2	0	M L L	3 3 0	1 1 0	4 4 0	1	124	0
ALARM OPERATOR	6	0	0	L L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	41	37	10	H L L	3 3 3	1 1 1	3 3 4	1	1	1
DETERMINE PUMP LIMITATIONS	50	52	45	H M H	3 3 3	1 1 1	4 4 4	1	1	1
CAPTAIN	49	58	69	H H M	3 3 3	1 1 2	3 4 4	1	1	1
ENGINEER	83	86	87	H H H	3 3 3	1 1 2	4 4 4	1	1	1
FIREMAN	43	45	23	L M H	3 3 3	1 1 1	4 4 4	1	1	1
INSPECTOR	2	8	0	M M L	3 3 0	1 1 0	3 4 0	14	12	0
ALARM OPERATOR	6	0	0	L L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	36	42	10	H L L	3 3 3	1 1 1	4 3 3	1	1	1
DETERMINE POSITION CF ENGINES IN RELAY LINES	46	44	44	L L M	3 3 3	1 1 1	4 4 3	1	1	1
CAPTAIN	52	56	75	H M L	3 3 3	1 2 2	3 4 3	1	1	1
ENGINEER	83	69	82	L L M	3 3 3	1 2 1	4 4 4	1	1	1
FIREMAN	34	38	21	L M H	3 3 3	2 2 1	4 4 4	1	1	1
INSPECTOR	6	6	0	M M L	3 3 0	2 1 0	4 4 0	1	1	0
ALARM OPERATOR	6	0	0	L L L	4 0 0	2 0 0	4 0 0	124	0	0
MECHANIC	23	16	0	H L L	3 3 0	2 1 0	4 4 0	1	1	0

* LIFT WATER WITH PUMP Requires a knowledge of hydraulics as it relates to the effects of atmospheric pressure on the surface of a body of water. It also requires an understanding of the effects of elevation in relation to atmospheric pressure. Further knowledge and understanding are required of the principles of pumping. The mechanic in a small or medium department is more directly involved in the testing of pumping equipment. Generally accomplished at a low rate of frequency by all personnel who are assigned the task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	1	1	0	0	0	1	0	0	0
BASIC-GENERAL	21	10	1	8	14	8	0	5	6	4	2	2
IN-DEPTH	29	21	1	19	44	17	5	23	31	18	0	2

Statewide Advisory Committee recommendations

CAP 44 3 3DN- : ENGR 90 3 4DRE : F/M 31 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 18 3 L 2A3D

* DETERMINE PUMP LIMITATIONS Involves knowledge of the relationship of the horsepower of motors to workload performance. It also requires knowledge of pump design and condition of the structural members of the pump. The captain in the large department may be more involved in the training of others. The mechanic in a small or medium department is more directly involved in the testing of pumping equipment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	2	3	0	0	0	1	0	0	0
BASIC-GENERAL	18	6	1	7	13	7	0	6	9	6	2	2
IN-DEPTH	27	17	1	15	36	19	7	20	34	21	0	1

Statewide Advisory Committee recommendations

CAP 65 3 3DN- : ENGR 86 3 4DME : F/M 29 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 18 3 L 2A3D

* DETERMINE POSITION OF ENGINES IN RELAY LINE Involves knowledge and understanding of the effects of friction loss in hose lines as they relate to engine and nozzle pressure. Requires an understanding and ability to apply formulas as related to determining engine location in long lines. The captain in the large department may be more involved in the training of others. The engineers in the small departments must be capable of performing this function because of probable weak water supplies. In the large department this task is important because it may be needed more often for large fires.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	2	2	0	2	1	0	0	0
BASIC-GENERAL	16	5	1	8	12	8	1	5	16	11	7	1
IN-DEPTH	27	17	1	16	29	15	5	18	26	15	0	2

Statewide Advisory Committee recommendations

CAP 69 3 4DRE : ENGR 80 3 4D4D : F/M 25 3 L 1A3D : INSP 2 3 D 2DN- : A/O 1 0 D 1AN- : MECH 5 3 D 1AN-

TABLE 48. WATER SUPPLY

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE SOURCE AND VOLUME OF REGULAR SUPPLIES	56	54	45	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	71	72	84	H	H	L	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	74	73	66	H	H	H	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	50	48	24	M	M	H	3	3	3	1	1	1	4	4	4	1	1	1
INSPECTOR	25	22	9	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	6	10	0	H	H	L	3	3	0	2	1	0	4	1	0	12	0	0
MECHANIC	18	11	4	H	L	L	3	3	3	1	1	2	3	3	4	1	1	1
DETERMINE SOURCE AND VOLUME OF EMERGENCY SUPPLIES	48	45	35	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	64	65	81	H	H	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	57	60	68	H	H	H	3	3	3	1	1	1	4	3	4	1	1	1
FIREMAN	47	37	6	M	M	H	3	3	3	1	2	1	4	4	3	1	1	1
INSPECTOR	17	25	9	H	L	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	6	0	0	L	L	L	3	0	0	2	0	0	3	0	0	1	0	0
MECHANIC	9	5	4	H	L	L	3	3	3	2	1	2	4	3	4	1	1	1
DETERMINE LOCATIONS AND PURPOSE OF CONTROL VALVES	42	38	39	H	H	H	3	3	3	1	1	1	3	3	4	1	1	1
CAPTAIN	56	56	75	H	H	L	3	3	3	1	1	1	3	3	2	1	1	1
ENGINEER	49	56	41	H	L	H	3	3	3	1	1	1	4	3	4	1	1	1
FIREMAN	39	30	25	M	M	H	3	3	3	1	1	1	4	4	4	1	1	1
INSPECTOR	23	26	11	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	5	4	H	L	L	3	3	3	1	1	2	3	3	4	1	1	1

* DETERMINE SOURCE AND VOLUME OF REGULAR SUPPLIES Requires a knowledge of water systems, storage facilities, and/or pumping devices; plus the mathematical and geometrical ability to compute capacities. The captains in large departments must make this determination in their preplanning and also in their size-up at fires. The inspectors in the small and medium departments get involved in this category for planning and evaluating water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	1	4	0	0	0	0	0	0	0
BASIC-GENERAL	20	4	0	2	21	4	0	1	11	4	1	1
IN-DEPTH	25	9	1	5	29	11	4	11	31	10	5	0

Statewide Advisory Committee recommendations

CAP 81 3 4DME : ENGR 68 3 3DME : F/M 31 3 1A3D : INSP 13 3 3DRE : A/O 2 3 D 1AN- : MECH 7 3 D 1A2D

* DETERMINE SOURCES AND VOLUME OF EMERGENCY SUPPLIES Requires a knowledge of the location and accessibility of potential auxiliary supplies, plus the mechanical and geometrical ability to compute capacities. The captains in large departments must make this determination in their preplanning and also in their size-up at fires. The inspectors in the small and medium departments get involved in this category for planning and evaluating water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	1	3	0	0	0	2	0	0	0
BASIC-GENERAL	21	3	0	2	17	4	0	1	15	9	6	1
IN-DEPTH	23	8	1	4	25	8	3	8	17	4	0	0

Statewide Advisory Committee recommendations

CAP 77 3 3DME : ENGR 65 3 3D4D : F/M 16 3 1A3D : INSP 12 3 3DRE : A/O 1 0 D 1AN- : MECH 5 3 D 1A2D

* DETERMINE LOCATIONS AND PURPOSE OF CONTROL VALVES Involves a knowledge of maps, indicating main valve and grid systems, and an understanding of the various types of valves and their use. The captains in large departments must make this determination in their preplanning and also in their size-up at fires. The inspectors in the small and medium departments get involved in this category for planning and evaluating water supplies.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	4	0	0	0	5	2	0	0
BASIC-GENERAL	16	3	0	1	16	2	0	1	11	6	6	1
IN-DEPTH	20	9	1	2	17	7	5	5	21	5	0	0

Statewide Advisory Committee recommendations

CAP 70 3 3DME : ENGR 44 3 3DME : F/M 27 3 1A3D : INSP 15 3 2DRE : A/O 0 0 D 1AN- : MECH 6 3 D 1A2D

TABLE 48. WATER SUPPLY CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
DETERMINE SERVICE BOUNDARIES	44	34	38	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	55	51	68	H	H	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	54	54	49	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	43	25	24	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	10	9	11	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	15	4	L	H	H	0	3	3	0	2	2	0	3	3	0	1	1
MECHANIC	5	5	0	H	L	L	3	3	0	1	1	0	4	2	0	1	1	0
DETERMINE QUANTITY OF WATER FLOW THROUGH A WATER MAIN BASED ON DIAMETER, DISTANCE, AND ROUGHNESS COEFFICIENT	23	24	28	H	M	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	31	25	32	L	M	M	3	3	3	1	1	1	3	4	4	1	14	1
ENGINEER	31	45	44	L	L	H	3	3	3	1	1	1	4	3	3	1	1	1
FIREMAN	20	19	23	M	M	H	3	3	3	1	1	1	4	4	4	1	1	1
INSPECTOR	13	9	7	M	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	5	0	H	L	L	3	3	0	2	1	0	4	2	0	1	1	0
TRANSPOSE HYDRAULIC GRADIENT INTO FRICTION LOSS	21	15	12	H	M	H	3	3	3	1	1	1	4	4	4	1	1	1
CAPTAIN	20	20	27	H	M	L	3	3	3	1	1	1	3	4	4	1	14	1
ENGINEER	31	15	20	H	H	H	3	3	3	1	1	1	4	4	4	1	1	1
FIREMAN	19	16	3	M	M	M	3	3	3	1	1	2	4	4	4	1	1	1
INSPECTOR	6	8	4	M	H	H	3	3	3	1	1	1	3	4	3	1	12	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	14	5	0	H	L	L	3	3	0	2	1	0	4	3	0	1	1	0

* DETERMINE SERVICE BOUNDARIES Involves a knowledge of maps, indicating main, valve and grid systems within water service area. Approximately 50 percent of the captains and engineers in all departments, and firemen in small departments are involved in this assignment. Approximately 25 percent of the firemen in medium and large departments are also involved in this assignment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	2	0	0	0	5	0	0	0
BASIC-GENERAL	21	2	0	2	16	1	0	1	13	8	6	1
IN-DEPTH	17	6	1	1	17	3	0	0	20	4	0	0

Statewide Advisory Committee recommendations

CAP 64 3 3DME : ENGR 50 3 3DME : F/M 28 3 1A3D : INSP 11 3 L 3DRE : A/O 5 3 D 1AN- : MECH 1 3 D 1AN-

* DETERMINE QUANTITY OF WATER FLOW THROUGH A WATER MAIN BASED ON DIAMETER, DISTANCE AND ROUGHNESS COEFFICIENT Requires a knowledge and understanding of hydraulics calculations based on friction factors for various types and sizes of pipes. Over 30 percent of the captains and engineers and 20 percent of the firemen in all departments perform this function. It is performed at a low and moderate rate of frequency in the small and medium departments. In the large departments it is usually performed at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	2	1	0	1	2	2	0	0
BASIC-GENERAL	8	3	0	1	7	4	1	3	5	1	1	1
IN-DEPTH	10	8	1	5	12	8	4	5	21	4	0	1

Statewide Advisory Committee recommendations

CAP 31 3 3DRE : ENGR 42 3 3DME : F/M 22 3 L 1A2D : INSP 8 3 3DRE : A/O 0 0 D 1AN- : MECH 3 3 D 1AN-

* TRANSPOSE HYDRAULIC GRADIENT INTO FRICTION LOSS Requires a knowledge of hydraulics calculations dealing with the correlation of elevations with friction loss, pipe size, pipe length, and static and residual pressure in water systems. The engineers are involved in this assignment at a high frequency rate. However, only about 21 percent of all engineers perform the task. In the large departments, only 3 percent of the firemen transpose hydraulic gradients.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	0	0	0	0	1	0	0	0
BASIC-GENERAL	7	3	0	1	3	1	0	1	3	1	1	1
IN-DEPTH	12	8	1	5	9	9	4	6	6	5	0	1

Statewide Advisory Committee recommendations

CAP 25 3 3DRE : ENGR 21 3 3D4D : F/M 7 3 L 1A2D : INSP 5 3 3DRE : A/O 0 0 D 1AN- : MECH 3 3 D 1AN-

TABLE 49. RELATED ELECTRICITY

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY THEORY AND FUNDAMENTALS OF A.C. AND D.C. CURRENT	29	39	24	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	46	48	49	L M L	3 3 2	1 1 1	3 3 3	1	1	1
ENGINEER	29	40	44	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	22	37	6	H M M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	50	35	17	H H H	3 3 3	1 1 1	3 4 3	1	1	1
ALARM OPERATOR	6	3	20	H H H	3 5 1	1 1 1	3 4 3	1	2	1
MECHANIC	59	89	32	H H H	3 3 5	1 1 1	3 3 4	1	1	1
UTILIZE FUNDAMENTALS OF OPEN AND CLOSED CIRCUIT	35	36	44	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	55	41	49	M H H	3 3 3	1 1 1	3 3 4	1	1	1
ENGINEER	31	29	17	H H M	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	32	38	54	M M H	3 3 3	1 1 2	3 3 3	1	1	1
INSPECTOR	42	47	26	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ALARM OPERATOR	0	17	41	L H H	0 3 3	0 2 2	0 3 3	0	1	1
MECHANIC	59	79	37	H H H	3 3 5	1 1 1	4 3 3	1	1	1
UTILIZE FUNDAMENTALS OF FUSES, CIRCUIT BREAKERS, LIGHTNING ARRESTERS, GROUNDING DEVICES	42	50	51	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	62	50	62	M M H	3 3 3	1 1 2	3 3 4	1	1	1
ENGINEER	42	48	18	H H M	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	38	54	62	M M H	3 3 3	1 1 2	3 3 3	1	1	1
INSPECTOR	60	53	30	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ALARM OPERATOR	0	7	32	L H H	0 2 3	0 1 1	0 1 3	0	12	1
MECHANIC	50	79	48	H H H	3 3 3	1 1 1	3 3 3	1	1	1

* IDENTIFY THEORY AND FUNDAMENTALS OF A.C. AND D.C. CURRENT Requires a knowledge and understanding of magnetism, terminology, and fundamentals of electricity; an understanding of the difference between A.C. and D.C. current electricity. Involves knowledge and application of several laws of physics and the electron theory as related to electricity. The inspector in small and medium size departments has wider and more varied inspection responsibilities, whereas the inspector in a large department is likely to specialize. The mechanics in the small and medium departments are more involved in doing the actual work.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	0	4	4	0	2	1	0	0	0
BASIC-GENERAL	13	3	0	2	27	12	1	6	19	8	5	0
IN-DEPTH	8	6	2	1	6	3	2	5	1	0	0	0

Statewide Advisory Committee recommendations

CAP 49 3 3DRE : ENGR 41 3 3DME : F/M 12 3 1A2D : INSP 24 3 3DME : A/O 16 3 2D4D : MECH 43 3 2D3D

* UTILIZE FUNDAMENTALS OF OPEN AND CLOSED CIRCUIT Requires knowledge of circuitry as related to devices for opening and closing circuits. The inspector in small and medium size departments has wider and more varied inspection responsibilities, whereas the inspector in large departments may specialize. The alarm systems in the small department may be predominantly telephone and radio alerting systems. As the size of the department increases, the alarm operator must familiarize himself with increasingly complex alarm systems. The mechanics in the small and medium departments are more involved in doing the actual work.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	4	1	0	0	2	0	0	0
BASIC-GENERAL	18	3	0	1	28	10	0	5	15	2	0	0
IN-DEPTH	12	7	2	2	4	1	1	2	27	1	0	0

Statewide Advisory Committee recommendations

CAP 49 3 3DRE : ENGR 20 3 3DME : F/M 49 3 1A3D : INSP 31 3 2D3D : A/O 32 3 2D4D : MECH 46 3 2D3D

* UTILIZE FUNDAMENTALS OF FUSES, CIRCUIT BREAKERS, LIGHTNING ARRESTERS, GROUNDING DEVICES Requires a basic knowledge of electricity, circuitry and methods of protection from a short circuit due to a path of low resistance. A knowledge of resistance in circuits is required in order to understand theory of grounding. A greater percentage of firemen in the medium and large departments receive basic electrical training in this task. The inspector in small and medium departments has wider and more varied inspection responsibilities.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	5	2	0	0	3	0	0	0
BASIC-GENERAL	21	4	0	3	33	15	1	8	18	2	0	3
IN-DEPTH	10	4	2	1	8	4	1	3	28	1	0	0

Statewide Advisory Committee recommendations

CAP 60 3 3DRE : ENGR 25 3 3DME : F/M 58 3 1A3D : INSP 37 3 3D4D : A/O 24 2 2D4D : MECH 52 3 L 2D3D

TABLE 49. RELATED ELECTRICITY CONTINUED

	PEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY TYPES OF WIRE OR CABLE, SIZES, WHERE USED, AND HOW DETERMINED	23	26	25	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	43	28	51	H	H	H	3	3	3	1	1	2	3	3	2	1	1	1
ENGINEER	16	25	9	H	L	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	18	26	21	M	H	H	2	3	1	1	1	1	3	3	3	1	1	1
INSPECTOR	54	44	14	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	0	1	1	L	H	H	0	3	3	0	1	1	0	1	3	0	0	1
MECHANIC	50	68	30	H	H	H	3	3	5	1	1	1	3	3	4	1	1	1
IDENTIFY TYPES OF PERMANENT MOUNTED AND PORTABLE METERS	15	12	15	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	24	11	20	H	H	H	3	3	2	1	1	1	3	3	2	1	1	1
ENGINEER	13	14	5	H	H	H	3	3	3	1	1	1	4	2	3	1	1	1
FIREMAN	12	11	18	M	L	H	3	3	1	1	1	1	3	3	4	1	1	1
INSPECTOR	25	29	10	H	H	H	3	3	5	1	1	2	3	3	4	1	1	1
ALARM OPERATOR	6	3	14	H	H	H	3	2	3	1	1	1	3	1	3	1	0	1
MECHANIC	32	21	22	H	H	H	3	3	5	1	1	1	3	3	3	1	1	1
UTILIZE KNOWLEDGE OF AERIAL AND UNDERGROUND CONSTRUCTION, BOTH WIRE AND CABLE	11	20	23	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	18	22	46	H	H	H	3	3	3	1	1	2	4	3	2	1	1	1
ENGINEER	17	29	11	H	M	H	3	3	3	1	1	1	4	3	3	1	1	1
FIREMAN	5	15	19	H	H	H	3	3	1	1	1	1	3	3	4	1	1	1
INSPECTOR	31	25	10	H	H	H	3	3	5	1	1	2	3	3	4	1	1	1
ALARM OPERATOR	0	15	2	L	H	H	0	3	3	0	1	1	0	4	3	0	1	1
MECHANIC	9	11	1	H	H	H	3	3	3	1	1	1	4	3	3	1	1	12

* IDENTIFY TYPES OF WIRE OR CABLE, SIZES, WHERE USED, AND HOW DETERMINED Must have a good knowledge of the various types of wire and cable being manufactured and their particular uses. Requires knowledge and ability to determine circuit load requirements and select the proper size wire or cable to handle computed load. Involves knowledge of the different requirements for indoor wire and outdoor wire. The inspector in the small and medium departments has wider and more varied inspection responsibilities, whereas the inspector in large departments may be a specialist. The mechanics in the small and medium departments are more involved in doing the actual work. In the large department they may delegate work to others.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	0	6	3	0	0	3	0	0	0
BASIC-GENERAL	12	2	0	1	15	6	0	1	19	2	0	0
IN-DEPTH	6	2	1	1	2	1	1	2	1	0	0	0

Statewide Advisory Committee recommendations

CAP 47 3 3DRE : ENGR 12 3 2D3D : F/M 21 2 1A2D : INSP 23 3 2D3D : A/O 1 3 2D3D : MECH 38 3 2D3D

* IDENTIFY TYPES OF PERMANENT MOUNTED AND PORTABLE METERS Requires a knowledge of types of instruments, their construction and application. Must be able to interpret readings from meters. Captains, inspectors, and mechanics appear to be more involved in this function than are the other ranks. Whenever the task is performed by personnel assigned, it is done at a high frequency, with the exception of firemen in small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	1	1	1	0	0	5	2	0	0
BASIC-GENERAL	6	0	0	0	8	4	0	1	1	0	0	0
IN-DEPTH	5	3	1	1	1	0	0	0	10	0	0	0

Statewide Advisory Committee recommendations

CAP 19 3 3DRE : ENGR 7 3 2D3E : F/M 16 3 1A2D : INSP 14 3 2D3D : A/O 11 3 2DAD : MECH 23 3 L 2DME

* UTILIZE KNOWLEDGE OF AERIAL AND UNDERGROUND CONSTRUCTION, BOTH WIRE AND CABLE Must have a working knowledge of blueprint reading and circuit design. Requires knowledge of methods of setting poles, installing cross arms and bracing. Includes knowledge of type of wire and cable to use and how to splice wire and cable for minimum resistance and corrosion. Also requires knowledge of underground vault construction and methods of connecting cable. Captains in large departments are required to perform this task at a high rate of frequency; however, they may have less training for this assignment than other personnel.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	1	1	1	0	0	2	0	0	0
BASIC-GENERAL	4	0	0	0	13	3	0	0	4	2	0	0
IN-DEPTH	4	1	1	1	4	2	0	0	15	0	0	0

Statewide Advisory Committee recommendations

CAP 39 3 3DRE : ENGR 14 3 2D3D : F/M 17 3 1A3D : INSP 15 3 2D3D : A/O 3 3 2DAD : MECH 3 3 D 1AS-

TABLE 49. RELATED ELECTRICITY CONTINUED

	PEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
UTILIZE KNOWLEDGE OF FIRE ALARM STATION EQUIPPENT, PUBLIC AND AUXILIARY	54	49	36	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	57	55	49	H	H	H	3	3	3	1	1	2	3	3	4	1	1	1
ENGINEER	55	39	42	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	55	50	28	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	67	48	50	H	H	H	3	3	3	1	1	1	3	2	3	1	1	1
ALARM OPERATOR	29	62	45	H	H	H	3	3	3	1	2	2	4	3	3	1	1	1
MECHANIC	9	11	0	H	H	L	3	3	0	1	1	0	4	3	0	1	1	0
UTILIZE THEORY AND FUNDAMENTALS OF TELEPHONE COMMUNICATION	48	36	38	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
CAPTAIN	60	38	51	H	H	H	3	3	3	1	1	2	3	4	3	1	1	1
ENGINEER	39	35	57	H	H	H	3	3	3	1	2	1	3	3	3	1	1	1
FIREMAN	51	35	25	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	56	32	46	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	29	50	49	H	H	H	3	3	3	2	2	2	3	4	4	1	1	1
MECHANIC	9	16	0	H	H	L	3	3	0	1	1	0	4	3	0	1	1	0
UTILIZE THEORY AND FUNDAMENTALS OF SHORT WAVE RADIO PUBLIC ADDRESS SYSTEMS	37	25	28	H	H	H	3	3	3	1	1	2	3	4	3	1	1	1
CAPTAIN	48	17	47	H	H	H	3	3	3	1	2	2	3	4	3	1	1	1
ENGINEER	43	22	20	H	H	H	3	3	3	2	2	1	3	4	3	1	1	1
FIREMAN	31	27	24	H	H	H	3	3	3	1	1	2	3	4	3	1	1	1
INSPECTOR	58	24	37	H	H	H	3	3	3	1	1	2	3	3	3	1	1	1
ALARM OPERATOR	29	53	39	H	H	H	3	3	3	2	2	2	4	2	4	1	1	1
MECHANIC	5	21	0	H	H	L	3	3	0	1	1	0	4	3	0	12	1	0

* UTILIZE KNOWLEDGE OF FIRE ALARM STATION EQUIPMENT, PUBLIC AND AUXILIARY Must know the operation of all in-station alerting systems such as use of tappers, still alarm system, intercom system, alarm recording devices, and auxiliary protective signaling devices. Inspectors and alarm operators are required to have a more complete knowledge of this category because their normal duties and responsibilities require it.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	0	1	8	0	0	0	2	0	0	0
BASIC-GENERAL	25	1	0	2	20	5	0	4	10	1	0	0
IN-DEPTH	19	2	1	2	20	6	2	5	24	2	0	0

Statewide Advisory Committee recommendations

CAP 51 3 3DRE : ENGR 43 3 2D3D : F/M 35 3 1A3D : INSP 52 3 3DME : A/O 45 3 2D4D : MECH 3 3 D 1AN-

* UTILIZE THEORY AND FUNDAMENTALS OF TELEPHONE COMMUNICATION Involves knowledge of telephone operation, dialing methods or ringing devices. Requires a calm, soft, courteous manner of speaking for good communication. Approximately 50 percent or less of all personnel are required to perform telephone communications at a high rate of frequency. It is noted that the alarm operator is required to act with accuracy and speed, whereas only accuracy is necessary for the other ranks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	7	0	0	0	7	0	0	0
BASIC-GENERAL	25	2	0	1	13	1	0	1	17	3	0	0
IN-DEPTH	13	1	1	1	16	5	3	4	12	0	0	0

Statewide Advisory Committee recommendations

CAP 51 3 3DRE : ENGR 52 3 2DME : F/M 30 3 1A2D : INSP 46 3 3DME : A/O 46 3 2D4D : MECH 3 3 D 1AN-

* UTILIZE THEORY AND FUNDAMENTALS OF SHORT WAVE RADIO; PUBLIC ADDRESS SYSTEMS Requires knowledge and understanding of electronic theory and radio operation. Must understand capabilities and limitations of the equipment and how to correct certain problems when transmitting or receiving. Less than 50 percent of the personnel in most ranks are involved in utilizing theory and fundamentals. Generally, it requires a great deal of accuracy and speed in communications on the part of the individual concerned.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	0	6	1	0	0	0	0	0	0
BASIC-GENERAL	21	1	0	2	7	1	0	1	18	1	1	0
IN-DEPTH	10	1	1	1	12	0	1	1	10	0	0	0

Statewide Advisory Committee recommendations

CAP 43 3 3DRE : ENGR 23 3 2DME : F/M 25 3 1A3D : INSP 38 3 3DME : A/O 40 3 2D4D : MECH 3 3 D 1A2B

TABLE 50. CLERICAL ADMINISTRATION

	MEN			FRQ	T-K	A-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
OPERATE TYPEWRITERS	42	49	36	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	71	78	78	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ENGINEER	32	43	48	H H H	3 3 3	1 1 1	3 3 4	1 1 1
FIREMAN	36	38	14	H H H	3 3 3	1 1 1	2 3 3	1 1 1
INSPECTOR	63	66	37	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ALARM OPERATOR	56	66	41	H H H	3 3 3	1 1 1	3 1 3	1 1 1
MECHANIC	18	5	10	H H H	3 3 3	1 1 1	3 2 3	1 1 1
OPERATE OFFICE EQUIPMENT	26	23	19	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	58	31	16	H H H	3 3 3	1 1 1	3 3 2	1 1 1
ENGINEER	13	14	25	H H H	3 3 3	1 1 1	3 3 4	1 1 1
FIREMAN	17	19	18	H H H	3 3 3	1 1 2	2 3 3	1 1 1
INSPECTOR	56	59	22	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ALARM OPERATOR	56	41	22	H H H	3 3 3	1 1 1	3 3 3	1 1 1
MECHANIC	5	0	6	M L H	3 0 3	1 0 1	3 0 3	1 0 1
PREPARE CORRESPONDENCE	19	23	19	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	52	60	61	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ENGINEER	16	18	10	H H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	2	8	5	H H H	3 3 3	2 1 1	4 4 3	1 1 1
INSPECTOR	90	68	46	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ALARM OPERATOR	33	27	10	H H H	3 3 3	1 1 1	4 3 3	1 1 1
MECHANIC	18	37	16	M H H	3 3 3	1 1 1	3 3 3	1 1 1

* OPERATE TYPEWRITERS Includes the knowledge and training required to type at a speed consistent with that required in the average business or secretarial position. Captains in all departments are required to write reports, and consequently would be in need of this skill. Alarm operators and inspectors in the small and medium departments are required to make reports and keep logs. In the large departments, secretaries would most likely do this work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	11	3	0	0	9	3	0	0	4	0	0	0
BASIC-GENERAL	14	3	0	1	19	3	1	0	9	3	1	0
IN-DEPTH	8	5	1	1	4	3	1	1	0	16	6	0

Statewide Advisory Committee recommendations

CAP 77 3 3DN- : ENGR 44 3 2DME : F/M 20 3 L 1A2D : INSP 45 3 2DME : A/O 47 3 2D3D : MECH 10 3 D 1AN-

* OPERATE OFFICE EQUIPMENT Includes the knowledge and training necessary to operate standard office equipment at a rate consistent with the average business and secretarial requirements. The captain in the small department is required to do this work, as office assistance is usually limited. The alarm operators and inspectors in the small and medium departments are required to make reports and keep logs. In the large departments, secretaries would most likely do this work.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	0	5	0	0	0	1	0	0	0
BASIC-GENERAL	9	1	0	1	12	4	1	0	3	0	0	0
IN-DEPTH	7	6	1	1	3	1	0	0	9	3	0	0

Statewide Advisory Committee recommendations

CAP 24 3 2DN- : ENGR 21 3 2DME : F/M 18 3 L 1A2D : INSP 31 3 2DME : A/O 29 3 1D2D : MECH 5 3 D 1AN-

* PREPARE CORRESPONDENCE Requires the ability to take dictation and type, and an understanding of format, English composition, and punctuation. Alarm operators and inspectors in the small and medium departments are required to make reports and keep logs. In the large departments secretaries would do this work. The mechanic in the medium size department does this work, probably because he does not have secretarial help.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	5	1	0	0	3	1	1	0
BASIC-GENERAL	8	2	0	1	11	3	1	1	14	6	1	0
IN-DEPTH	5	3	2	1	3	2	1	1	2	0	0	0

Statewide Advisory Committee recommendations

CAP 60 3 3DRE : ENGR 12 3 2D2D : F/M 5 3 1A2D : INSP 55 3 2D3D : A/O 15 3 1D3D : MECH 19 3 D 1A2-

TABLE 50. CLERICAL ADMINISTRATION CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
EXECUTE ORDINARY BUSINESS PAPERS, REQUISITIONS, PURCHASE ORDERS, AND RECEIVING TICKETS	17	22	29	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	52	66	74	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	12	20	5	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	3	7	19	M	H	H	3	3	3	1	1	2	3	3	4	1	1	1
INSPECTOR	58	29	13	H	H	H	3	3	3	1	1	2	3	3	3	1	1	12
ALARM OPERATOR	31	23	15	H	H	H	3	3	3	1	1	1	4	3	2	1	1	1
MECHANIC	32	37	29	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
PREPARE MANUSCRIPT, REPORTS SPECIFICATIONS, REQUISITIONS, AND BUDGETS FROM PRE-DETERMINED DATA	18	23	20	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	44	61	68	H	H	M	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	9	24	18	M	H	H	3	3	1	1	1	1	2	3	3	1	1	1
FIREMAN	11	7	1	M	M	M	3	3	3	1	1	1	4	3	3	1	1	1
INSPECTOR	48	33	23	M	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ALARM OPERATOR	23	29	12	H	H	H	3	3	3	1	1	1	4	3	2	1	1	1
MECHANIC	23	37	17	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
MAINTAIN FILING SYSTEMS	22	30	20	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	52	83	61	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	14	16	8	H	H	H	3	3	1	1	1	1	1	4	3	1	1	1
FIREMAN	9	14	5	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
INSPECTOR	73	51	58	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
ALARM OPERATOR	31	39	23	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1
MECHANIC	27	37	23	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1

* EXECUTE ORDINARY BUSINESS PAPERS, REQUISITIONS, PURCHASE ORDERS AND RECEIVING TICKETS Involves the ability to type, file, channel and mail pertinent papers in an appropriate manner. The inspector in the small department has a wider range of responsibilities. The mechanic in small and medium size departments must execute this responsibility. In the large department there is usually a purchasing, warehouse, or stores division; however, the captain is heavily involved in this duty.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	1	4	1	0	0	4	1	1	0
BASIC-GENERAL	9	1	0	0	14	3	1	1	9	0	0	0
IN-DEPTH	2	1	1	1	3	1	1	1	15	0	0	0

Statewide Advisory Committee recommendations

CAP 70 3 3DRE : ENGR 7 3 2DME : F/M 4 3 1A2D : INSP 22 3 2DME : A/O 18 3 2D3D : MECH 31 3 L 2DME

* PREPARE MANUSCRIPT, REPORTS, SPECIFICATIONS, REQUISITIONS AND BUDGETS FROM PREDETERMINED DATA Requires ability to type, and understanding of format, English composition, punctuation, fire service terminology, fire department procedures, and the location of reference material and sources of information. There is more activity in this category in the medium and large departments. The inspector in the small department has a wider range of responsibilities. The mechanic in small and medium size departments must execute this responsibility. In large departments there is usually a purchasing, warehouse, or stores division.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	3	0	0	0	2	0	0	0
BASIC-GENERAL	5	1	0	0	13	1	0	1	12	2	0	0
IN-DEPTH	7	4	4	1	4	3	1	1	6	6	5	0

Statewide Advisory Committee recommendations

CAP 64 3 3DRE : ENGR 18 3 2DME : F/M 3 3 L 1A2D : INSP 27 3 2D3- : A/O 16 3 L 1A2D : MECH 21 3 L 2DME

* MAINTAIN FILING SYSTEM Requires the knowledge and information necessary to retain information and technical data in an orderly manner. The captains in the small departments are not required to perform this duty as frequently as those in the medium and large departments. In the large department, the captain usually has clerical assistance. Inspectors and mechanics are involved in the area because they are usually required to maintain separate filing systems.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	10	0	0	0	5	0	0	0
BASIC-GENERAL	10	2	0	1	15	1	1	1	15	1	1	0
IN-DEPTH	3	2	1	2	3	3	0	1	0	0	0	0

Statewide Advisory Committee recommendations

CAP 63 3 2DN- : ENGR 10 3 2DME : F/M 7 3 1A2- : INSP 59 3 2D3- : A/O 26 3 2D3D : MECH 25 3 D 1D2-

TABLE 50. CLERICAL ADMINISTRATION CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
PREPARE PAYROLL	4	0	4	M H H	3 3 3	1 1 1	4 3 3	1	1	1
CAPTAIN	2	1	19	L H H	2 2 3	1 1 1	4 3 3	1	1	1
ENGINEER	3	0	0	H L L	3 0 0	1 0 0	4 0 0	124	0	0
FIREMAN	5	0	0	M L L	3 0 0	1 0 0	3 0 0	1	0	0
INSPECTOR	2	1	1	M H M	3 3 3	1 1 2	3 3 3	1	1	1
ALARM OPERATOR	15	6	0	H H L	3 3 0	1 1 0	4 3 0	1	1	0
MECHANIC	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0

* PREPARE PAYROLL Requires a knowledge of personnel, rates, applicable deductions, time sheets, computing pay, check writing, etc. The captains in some large departments are required to maintain payroll on large fires (wildland) where outside assistance is required. This duty may be delegated to the alarm operator in small departments.

Post Employment Training

	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	0	0	0	0	0	0	0	4	0	0	0
IN-DEPTH	1	1	0	1	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 14 2 D 1DN- : ENGR 0 0 D 1DN- : F/M 1 0 D 1DN- : INSP 1 3 D 1DN- : A/O 3 3 L 1D2D : MECH 0 0 D 1DN-

TABLE 51. RELATED MECHANICS

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY THEORY AND FUNDAMENTALS OF MOTOR DRIVEN APPARATUS	49	57	41	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	59	54	83	H H M	3 3 3	1 1 1	3 3 4	1	1	1
ENGINEER	69	79	72	H H H	3 3 3	1 1 1	4 3 4	1	1	1
FIREMAN	41	57	14	H H H	3 3 3	1 1 1	3 4 3	1	1	1
INSPECTOR	10	6	15	H M H	3 3 3	1 1 1	4 3 3	1	1	1
ALARM OPERATOR	8	1	0	H H L	3 3 0	1 1 0	3 1 0	1	0	0
MECHANIC	95	100	76	H H H	3 3 5	1 1 1	4 3 4	1	1	1
INTERPRET N.F.P.A. HANDBOOK OF FIRE PROTECTION AND TECHNICAL PAMPHLETS 12TH EDITION	36	50	42	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	64	63	61	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	46	59	65	H M H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	22	48	28	M H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	52	31	32	H H H	3 3 3	1 1 1	3 4 3	1	12	1
ALARM OPERATOR	15	0	4	H L H	1 0 3	1 0 1	3 0 3	1	0	1
MECHANIC	45	74	17	H L M	5 3 3	1 1 1	4 3 3	1	1	1
UTILIZE FUNDAMENTALS OF LATHE WORK	5	2	1	H M H	5 3 5	1 1 1	4 3 4	1	1	1
CAPTAIN	6	3	1	M H H	3 3 3	1 2 1	3 3 3	1	1	1
ENGINEER	3	1	0	H L H	3 3 3	1 1 2	4 3 4	124	1	1
FIREMAN	5	1	0	M M L	3 2 0	1 1 0	3 4 0	12	1	0
INSPECTOR	0	1	0	L M L	0 3 0	0 1 0	0 0 0	0	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	45	63	40	H M H	5 3 5	1 1 1	4 3 4	1	1	1

* IDENTIFY THEORY AND FUNDAMENTALS OF MOTOR DRIVEN APPARATUS Involves the knowledge and understanding of the principles and process of the mechanical functions used in automotive vehicles. The captain in the large department may be more involved in this category than captains in small and medium size departments. He has received more intense and diversified training than the other captains. He is frequently required to train others. The mechanics in the medium and small departments have to be well versed in this category as they are directly involved in performance. The mechanic in the large department may delegate this responsibility to others.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	2	0	1	5	3	0	1	2	0	0	0
BASIC-GENERAL	19	6	0	3	26	10	1	4	14	5	0	1
IN-DEPTH	16	8	0	7	22	13	5	19	16	14	1	1

Statewide Advisory Committee recommendations

CAP 75 3 3DRE : ENGR 72 3 3DME : F/M 23 3 1A3D : INSP 13 3 D 2DME : A/O 1 3 L 1A2D : MECH 82 3 2D3D

* INTERPRET N.F.P.A. HANDBOOK OF FIRE PROTECTION, 12TH EDITION, AND TECHNICAL PAMPHLETS Requires the knowledge and experience necessary to locate, read, understand, evaluate and apply as intended technical data in the publications described. The inspector in the small department must depend upon these publications as a guide to his action because of the lack of local codes and ordinances. The mechanics in the medium and small departments must refer to these technical data, as they are directly involved with the work. In the large departments the work may be delegated to others.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	6	0	1	8	4	0	2	4	4	1	0
BASIC-GENERAL	19	8	2	5	25	17	2	7	11	8	1	0
IN-DEPTH	8	5	1	3	13	9	6	10	17	16	1	0

Statewide Advisory Committee recommendations

CAP 62 3 3DME : ENGR 62 3 2D3D : F/M 30 3 1A3D : INSP 34 3 3D4D : A/O 5 1 1A2D : MECH 28 3 L 1A3D

* UTILIZE FUNDAMENTALS OF LATHE WORK Refers to the ability to apply fundamental principles of metal and wood turning. The extent of this task would vary with the size of the department, the facilities available, and the amount of construction and repair work done. The mechanics assigned to the fire departments utilize fundamentals of lathe work almost exclusively, in comparison to all other ranks. An extremely small percentage of personnel in the other ranks has received some training outside of the department.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	2	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	1	1	0	0	1	0	0	0	0	0	0	0
IN-DEPTH	1	1	0	1	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 2 3 D 1DN- : ENGR 1 3 D 1D2D : F/M 1 2 D 1A2D : INSP 0 0 D 1DN- : A/O 0 0 D 1AN- : MECH 46 5 3DME

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
UTILIZE FUNDAMENTALS OF WELDING GAS AND ELECTRIC	21	23	22	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	18	23	40	M M H	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	23	22	5	M H H	3 3 3	1 1 1	3 3 4	1	1	1
FIREMAN	22	25	21	H L M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	0	5	0	L H L	0 3 0	0 1 0	0 4 0	0	1	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	91	100	55	H H H	5 3 5	1 1 1	4 4 4	1	1	1
UTILIZE FUNDAMENTALS OF BLACKSMITHING	10	2	3	H H H	3 3 5	1 1 1	3 3 3	1	1	1
CAPTAIN	6	4	0	M H L	3 3 0	1 2 0	3 3 0	1	1	0
ENGINEER	5	3	0	H L L	3 3 0	1 1 0	4 3 0	1	1	0
FIREMAN	13	1	4	L H H	3 3 3	1 1 2	2 3 3	1	1	1
INSPECTOR	0	1	0	L M L	0 0 0	0 1 0	0 0 0	0	14	0
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	64	58	33	H H H	5 5 5	1 1 1	4 3 3	1	12	1
UTILIZE FUNDAMENTALS OF PIPE FITTING WATER, GAS, AND STEAM	17	8	12	M H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	16	10	14	M M H	3 3 3	1 1 1	3 4 3	1	1	1
ENGINEER	28	12	30	M L H	3 3 3	1 1 2	3 3 4	1	1	1
FIREMAN	13	6	4	M H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	7	2	M H H	3 3 3	2 1 1	3 4 3	1	1	1
ALARM OPERATOR	0	0	0	L L L	0 0 0	0 0 0	0 0 0	0	0	0
MECHANIC	73	74	54	H H H	5 5 5	1 1 1	4 3 3	1	1	1

* UTILIZE FUNDAMENTALS OF WELDING, GAS AND ELECTRIC Involves the knowledge and ability necessary to perform jobs requiring the fusing of metals and would vary with the size of the department, facilities, equipment, and need for such operations. Over 90 percent of the mechanics in the small and medium size departments utilize welding techniques. Approximately half of the mechanics in large departments are involved in this task. The technical knowledge requirement is high and training in depth is required.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	0	2	0	0	0	0	0	0	0
BASIC-GENERAL	8	1	0	1	12	1	0	0	11	0	0	1
IN-DEPTH	5	2	1	1	8	3	0	1	10	0	0	0

Statewide Advisory Committee recommendations

CAP 35 3 L 2YR- : ENGR 10 3 D 2YRE : F/M 22 3 1AJD : INSP 1 0 D 12M- : A/O 0 0 D 1AJ- : MECH 66 5 3YRE

* UTILIZE FUNDAMENTALS OF BLACKSMITHING Refers to the knowledge, ability and experience necessary to form and fabricate metal parts, for which demand would be governed by the department size, facilities, equipment, and need for such abilities. Forty-one percent of the mechanics are involved in blacksmithing duties and at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	2	1	0	0	2	0	0	0	2	0	0	0
IN-DEPTH	1	1	0	1	0	0	0	0	0	0	0	0

Statewide Advisory Committee recommendations

CAP 1 3 D 12M- : ENGR 1 3 L 2YRE : F/M 5 3 D 1AJD : INSP 0 0 D 12M- : A/O 0 0 D 1AJ- : MECH 41 5 3YRE

* UTILIZE FUNDAMENTALS OF PIPE FITTING: WATER, GAS AND STEAM Involves the ability to lay out, cut, thread, and otherwise join various kinds of pipe for a variety of purposes, most common of which, in the fire service, would be apparatus and building construction and maintenance. The majority of mechanics in all departments perform this task at a high rate of frequency and at the analysis and synthesis level of technical knowledge. Engineers who perform this task usually do so at the application level rather than at the analysis and synthesis level.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	2	0	0	1	0	0	1	1	0	0	0
BASIC-GENERAL	6	1	0	0	6	1	0	0	5	0	0	0
IN-DEPTH	2	2	1	2	1	0	0	0	6	0	0	0

Statewide Advisory Committee recommendations

CAP 14 3 L 12M- : ENGR 27 3 2YRE : F/M 6 3 L 1AJD : INSP 3 3 L 2YRE : A/O 0 0 D 1AJ- : MECH 59 5 2YRD

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ			T-K			A-S			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
IDENTIFY MECHANICAL PRINCIPLES OF GASOLINE AND DIESEL MOTORS	39	51	42	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	38	33	61	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	58	79	65	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1
FIREMAN	34	54	27	H	H	M	3	3	3	1	1	1	3	3	4	1	1	1
INSPECTOR	0	6	0	L	M	L	0	3	0	0	1	0	0	3	0	0	12	0
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	86	89	79	H	H	H	5	3	3	1	1	1	4	3	3	1	1	1
IDENTIFY MECHANICAL PRINCIPLES OF IGNITION	41	45	41	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	34	36	58	H	H	H	3	3	3	1	1	1	4	3	3	1	1	1
ENGINEER	55	64	65	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
FIREMAN	41	46	27	H	L	M	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	6	6	5	H	H	H	3	3	3	1	1	1	4	3	3	1	12	1
ALARM OPERATOR	0	0	0	L	L	L	0	0	0	0	0	0	0	0	0	0	0	0
MECHANIC	95	89	81	H	H	H	5	3	5	1	1	1	4	3	3	1	1	1
UTILIZE FUNDAMENTALS OF GAUGES AND METERS	47	57	44	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
CAPTAIN	41	46	51	H	H	H	3	3	3	1	1	1	3	3	3	1	1	1
ENGINEER	76	90	73	H	H	H	3	3	3	2	1	1	4	3	3	1	1	1
FIREMAN	40	56	31	H	H	H	3	3	3	1	1	1	3	4	3	1	1	1
INSPECTOR	8	14	10	H	M	H	3	3	3	1	1	1	3	4	3	14	1	1
ALARM OPERATOR	15	1	4	H	H	H	3	3	3	1	1	1	3	1	3	1	0	1
MECHANIC	95	89	80	H	H	H	5	3	3	1	1	1	3	3	3	1	1	1

* IDENTIFY MECHANICAL PRINCIPLES OF GASOLINE AND DIESEL MOTORS Involves a knowledge and understanding of the principles and processes of the mechanical functions and characteristics of gasoline and diesel motors. The training for captains in the large departments may be more extensive and they may be required to teach others more often than do captains in the small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	1	11	10	0	9	3	1	0	1
BASIC-GENERAL	16	4	0	4	23	10	1	2	11	5	1	1
IN-DEPTH	10	6	1	4	11	10	3	6	19	20	0	0

Statewide Advisory Committee recommendations

CAP 54 3 2DN- : ENGR 66 3 3DME : F/M 32 3 1A2D : INSP 1 0 D 2DN- : A/O 0 0 D 1AN- : MECH 81 3 3DME

* IDENTIFY MECHANICAL PRINCIPLES OF IGNITION Deals with the knowledge and information required to understand the mechanical functions of an ignition system, such as the purpose and relationship of the various mechanical parts to the other parts, and the system as a whole. The training for captains in the large departments may be more extensive and they may be required to teach others more often than captains in the small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	3	0	1	6	6	0	5	2	0	0	0
BASIC-GENERAL	18	3	0	3	23	10	1	3	18	5	1	1
IN-DEPTH	9	7	3	5	10	12	4	7	16	5	0	0

Statewide Advisory Committee recommendations

CAP 52 3 2DN- : ENGR 64 3 3DME : F/M 31 3 1A2D : INSP 5 3 L 2DME : A/O 0 0 D 1AN- : MECH 84 5 3DME

* UTILIZE FUNDAMENTALS OF GAUGES AND METERS Refers to the knowledge and ability to observe and interpret the readings of the various gauges and instruments, and associate their readings with the normal and other than normal operation of the systems that they meter. The engineer in the medium size department may be involved in the operation of more different types of equipment than the engineers of small and large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	3	0	0	6	3	0	3	3	3	0	2
BASIC-GENERAL	19	7	0	6	29	9	3	7	15	4	2	2
IN-DEPTH	19	8	1	8	21	13	5	12	8	9	0	0

Statewide Advisory Committee recommendations

CAP 49 3 3DRE : ENGR 76 3 3DME : F/M 36 3 1A3D : INSP 10 3 2D3D : A/O 5 3 1A2D : MECH 84 3 2D3D

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L
IDENTIFY MECHANICAL DEFECTS, LOOSE PARTS, UNUSUAL NOISES, UNUSUAL TIRE WEAR, AND EFFECTS OF TIRE PRESSURES	52	55	49	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	49	47	72	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ENGINEER	87	86	81	H H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	41	54	28	H H H	3 3 3	1 1 2	3 3 3	1 1 1
INSPECTOR	6	6	13	H H H	3 3 3	1 1 1	3 3 3	1 12 1
ALARM OPERATOR	8	0	0	H L L	3 0 0	1 0 0	3 0 0	1 0 0
MECHANIC	95	89	82	H H H	4 4 5	1 1 1	3 4 3	1 1 1
IDENTIFY PROPER POSITION OF SWITCHES, GAUGES, LEVERS, ETC. UNDERSTAND THE EFFECTS OF ABRASIVE MATERIAL ON EQUIPMENT	51	60	47	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	46	37	71	H H H	3 3 3	1 1 1	3 3 3	1 1 1
ENGINEER	84	91	74	H H H	3 3 3	1 1 1	4 3 3	1 1 1
FIREMAN	41	65	28	H H H	3 3 3	1 1 1	3 3 3	1 1 1
INSPECTOR	8	7	10	H H H	3 3 3	1 1 1	4 4 2	1 12 1
ALARM OPERATOR	15	0	4	H L H	3 0 3	1 0 1	3 0 3	1 0 1
MECHANIC	95	89	81	H H H	3 3 3	1 1 1	3 3 3	1 1 1
INTERPRET THE COURSE AND STEPS TAKEN BY THE FUEL FROM THE FUEL TANKS TO THE EXHAUST	40	48	43	H H H	3 3 3	1 1 1	3 3 3	1 1 1
CAPTAIN	32	28	69	H H M	3 3 3	1 1 1	4 3 3	1 1 1
ENGINEER	64	77	60	H H H	3 3 3	1 1 1	3 3 3	1 1 1
FIREMAN	34	50	27	H M M	3 3 3	1 1 1	3 3 3	1 1 1
INSPECTOR	4	6	0	H H L	3 3 0	1 1 0	3 3 0	14 12 0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1 0 0
MECHANIC	91	89	80	H H H	3 3 3	1 1 1	3 3 4	1 1 1

* IDENTIFY MECHANICAL DEFECTS, LOOSE PARTS, UNUSUAL NOISES, UNUSUAL TIRE WEAR AND EFFECTS OF TIRE PRESSURE
Has to do with the ability to detect, by sound and observation, trouble in its early stages, for the purpose of correcting faults that could affect both safety and economy. The captain in large departments may have more direct training responsibility for his subordinates in this area. He may also have had more experience as an engineer than captains of small or medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	2	0	0	1	3	0	0	2	0	0	0
BASIC-GENERAL	26	5	0	5	32	7	1	5	27	3	1	2
IN-DEPTH	14	7	1	4	15	4	2	2	4	6	0	1

Statewide Advisory Committee recommendations
CAP 65 3 2DN- : ENGR 82 3 3DME : F/M 83 3 1A3D : INSP 11 3 D 2DN- : A/O 1 0 D 1AN- : MECH 86 4 3DME

* IDENTIFY PROPER POSITION OF SWITCHES, GAUGES, LEVERS, ETC. UNDERSTAND THE EFFECTS OF ABRASIVE MATERIAL ON EQUIPMENT
Requires a knowledge and understanding of the position of switches, levers and gauges for normal and other than normal operation and an understanding of the detrimental effect of sand, grit, etc., on the working parts of such items. The captains of large departments may have more direct responsibility for training subordinates in this area. They may also have had more experience as an engineer than captains of small or medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	2	0	0	2	3	0	0	1	0	0	0
BASIC-GENERAL	24	2	0	3	33	6	1	4	26	4	1	1
IN-DEPTH	15	7	1	5	19	3	1	5	3	5	0	0

Statewide Advisory Committee recommendations
CAP 63 3 3DN- : ENGR 77 3 3DME : F/M 35 3 1A3D : INSP 10 3 L 3DRE : A/O 4 3 L 1A2D : MECH 84 3 3DME

* INTERPRET THE COURSE AND STEPS TAKEN BY THE FUEL FROM THE FUEL TANKS TO THE EXHAUST Has to do with understanding of the fuel system and all of its component parts, and the function and relationship of the parts to one another and to the system as a whole. The captain of a large department may have more direct training responsibility for his subordinates. He may also have had more experience as an engineer than captains of small or medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	4	7	0	2	1	0	0	0
BASIC-GENERAL	24	4	0	3	19	7	1	5	26	4	1	2
IN-DEPTH	8	5	1	3	17	8	5	7	1	6	0	1

Statewide Advisory Committee recommendations
CAP 59 3 2DM- : ENGR 63 3 3DME : F/M 31 3 L 1A2D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 83 3 2D3D

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY CAUSES OF IMPROPER COMBUSTION	35	44	30	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	26	26	12	H H M	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	59	64	59	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	29	48	28	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	6	0	H H L	3 3 0	1 2 0	3 4 0	14	12	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	84	79	H H H	4 4 3	1 1 1	3 3 4	1	1	1
IDENTIFY PROPER USE OF CHOKE	47	53	35	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	38	30	55	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	83	80	81	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	38	58	11	H H H	3 3 3	1 1 1	3 4 3	1	1	1
INSPECTOR	4	2	0	H H L	3 3 0	1 1 0	3 3 0	14	12	0
ALARM OPERATOR	8	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	82	H H H	3 3 3	1 1 1	3 3 3	1	1	1
IDENTIFY THE PURPOSE OF IGNITION IN INTERNAL COMBUSTION ENGINES	42	45	28	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	39	27	43	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	68	68	60	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	34	49	11	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	2	0	H M L	3 3 0	1 1 0	3 3 0	14	12	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	76	H H H	3 3 3	1 1 1	4 3 4	1	1	1

* IDENTIFY CAUSES OF IMPROPER COMBUSTION Requires the knowledge necessary to diagnose problems related to improper combustion, such as detonation, improper fuel-air mixture, improper ignition, etc. This is primarily the mechanic's responsibility, however, over 50 percent of the engineers in all size departments also perform this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	0	4	6	0	2	2	2	0	0
BASIC-GENERAL	20	3	0	3	19	9	1	6	10	2	1	1
IN-DEPTH	8	5	1	3	13	6	5	7	3	6	0	1

Statewide Advisory Committee recommendations

CAP 16 3 2DM- : ENGR 60 3 3DME : F/M 32 3 1A2D : INSP 1 3 L 2DME : A/O 0 0 D 1AN- : MECH 82 4 2D3D

* IDENTIFY PROPER USE OF CHOKE Pertains to an understanding of fuel-air mixture, the difficulties in starting motor caused by under-choking, and the effect of over-choking as related to starting, crankcase dilution, cylinder wear, and explosion hazard. Practically all of the engineers and mechanics in all size departments perform this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	10	6	0	1	3	0	0	0
BASIC-GENERAL	28	4	0	6	18	7	1	6	22	3	0	2
IN-DEPTH	10	5	1	3	18	9	6	7	4	6	0	1

Statewide Advisory Committee recommendations

CAP 49 3 L 2DM- : ENGR 81 3 3DME : F/M 22 3 1A3D : INSP 1 3 D 2DN- : A/O 1 0 D 1AN- : MECH 86 4 2D3D

* IDENTIFY THE PURPOSE OF IGNITION IN INTERNAL COMBUSTION ENGINES Requires a knowledge of fuel-air mixtures and the relationship of same to the electrical impulses that ignite them. Generally, all of the mechanics in all size departments perform this task and receive training in depth. Over 60 percent of the engineers also perform this task, but receive only basic and general training.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	6	4	0	2	3	0	0	1
BASIC-GENERAL	21	3	0	5	23	11	1	5	18	4	0	1
IN-DEPTH	11	6	1	4	13	8	5	6	1	6	0	1

Statewide Advisory Committee recommendations

CAP 40 3 3DN- : ENGR 62 3 3DME : F/M 19 3 1A3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 81 3 L 2D3D

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY THE PURPOSE OF THE DISTRIBUTOR	38	48	27	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	34	27	44	H H M	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	67	67	66	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	29	55	6	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	2	0	H L L	3 3 0	1 1 0	3 3 0	14	12	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	81	H H H	3 3 3	1 1 1	3 3 3	1	1	1
IDENTIFY CAUSES OF FAULTY IGNITION	37	40	27	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	33	32	38	H H L	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	61	64	63	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	30	39	10	H H M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	79	H H H	4 4 5	1 1 1	4 4 4	1	1	1
IDENTIFY PURPOSE OF PISTONS, RINGS, VALVES, OIL, COOLING SYSTEMS	41	51	31	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	36	32	46	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	67	70	71	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	35	57	10	H H M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	81	H H H	4 3 3	1 1 1	4 3 4	1	1	1

* IDENTIFY THE PURPOSE OF THE DISTRIBUTOR Involves the understanding of the function of the distributor and its relationship to the other ignition parts and the system as a whole. All mechanics are predominantly involved in this task. Approximately two-thirds of all engineers in all size departments also have responsibilities in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	0	10	5	0	1	2	0	0	0
BASIC-GENERAL	20	4	0	4	25	11	1	6	17	3	1	1
IN-DEPTH	10	6	1	3	9	8	6	6	1	6	0	1

Statewide Advisory Committee recommendations

CAP 40 3 3DN- : ENGR 66 3 3DME : F/M 17 3 1A3D : INSP 1 3 D 2DN- : A/O 0 0 D 1AN- : MECH 84 3 2D3D

* IDENTIFY CAUSES OF FAULTY IGNITION Requires the knowledge necessary to diagnose problems related to improper ignition, such as weak coil, improper timing, dirty, pitted and improperly adjusted points, etc. Mechanics are involved at the analysis and synthesis level of technical knowledge required. Engineers are also involved at a high frequency but at the application level of technical knowledge required.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	7	2	0	1	2	0	0	1
BASIC-GENERAL	19	4	0	5	16	8	1	6	14	3	1	1
IN-DEPTH	10	5	1	3	12	8	6	7	3	6	0	1

Statewide Advisory Committee recommendations

CAP 36 3 3DN- : ENGR 63 3 2DME : F/M 17 3 1A3D : INSP 0 0 D 2DN- : A/O 0 0 D 1-N- : MECH 83 4 3DME

* IDENTIFY PURPOSE OF PISTONS, RINGS, VALVES, OIL, COOLING SYSTEMS Requires a knowledge of the operating relationship of the mechanical, fuel, ignition, lubricating and cooling systems, plus an understanding of the purpose and function of the auxiliary cooling system as related to the motor and pump. Primarily an assignment for the mechanic and engineer; however, the firemen in medium size departments also function in this capacity.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	2	0	0	9	5	0	2	4	2	0	1
BASIC-GENERAL	17	2	0	2	24	13	1	7	17	1	0	1
IN-DEPTH	11	7	1	6	11	8	6	6	4	7	1	1

Statewide Advisory Committee recommendations

CAP 43 3 3DN- : ENGR 71 3 3DME : F/M 20 3 1A2D : INSP 0 0 D 2DN- : A/O 0 0 D 1AN- : MECH 84 3 3DME

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
INTERPRET MEANING OF R.P.M., TORQUE, HORSEPOWER, AND THE PURPOSE OF EACH	40	51	34	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	37	31	50	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	64	67	78	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	34	59	12	H M M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	72	H H H	3 3 3	1 1 1	3 3 4	1	1	1
IDENTIFY THE PURPOSE OF A TRANSMISSION	45	53	32	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	39	35	45	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	81	72	76	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	34	61	10	H H M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	15	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	82	H H H	3 3 3	1 1 1	3 3 3	1	1	1
IDENTIFY THE MECHANICAL PRINCIPLE OF POWER FROM PISTON TO REAR WHEELS	39	49	28	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	29	30	44	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	64	78	59	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	34	51	10	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	8	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	80	H H H	3 3 3	1 1 1	3 3 4	1	1	1

* INTERPRET THE MEANING OF R.P.M., TORQUE, HORSEPOWER, AND THE PURPOSE OF EACH Involves an understanding of engineering terms and their relationship to power and performance output under a variety of conditions. There is more intensive training and instructional material available to the captain and engineer in the large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	2	0	0	8	5	0	1	4	2	0	1
BASIC-GENERAL	17	2	0	2	21	13	1	5	19	5	1	0
IN-DEPTH	11	9	1	6	15	11	6	9	4	6	0	1

Statewide Advisory Committee recommendations

CAP 46 3 3DN- : ENGR 74 3 3DRE : F/M 22 3 1A2D : INSP 0 0 L 2DME : A/O 0 0 D 1AN- : MECH 78 3 2D3D

* IDENTIFY THE PURPOSE OF A TRANSMISSION Refers to the knowledge required to describe the function of a transmission including its relationship to the motor, pump, clutch, and differential. The mechanics and the engineers are equally involved in the performance of this task. In the medium size departments, 61 percent of the firemen utilize this capability, while in the larger departments, only 10% are involved.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	8	6	0	1	1	0	0	0
BASIC-GENERAL	23	3	0	7	20	12	1	5	20	3	0	2
IN-DEPTH	13	6	1	4	17	9	6	9	5	7	1	1

Statewide Advisory Committee recommendations

CAP 43 3 3DN- : ENGR 76 3 3DRE : F/M 20 3 1A3D : INSP 0 0 D 2DN- : A/O 2 0 D 1AN- : MECH 85 3 2D3D

* IDENTIFY THE MECHANICAL PRINCIPLE OF POWER FROM PISTON TO REAR WHEELS Involves the knowledge and ability to trace the reciprocating action developed at the piston through all of its various changes and component systems to the final rotating power at the rear wheels. Eight-four percent of the mechanics apply this principle, as do two-thirds of the engineers.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	8	3	0	2	1	0	0	0
BASIC-GENERAL	19	3	0	4	24	11	1	5	18	5	1	1
IN-DEPTH	11	6	1	4	11	10	5	6	2	6	0	1

Statewide Advisory Committee recommendations

CAP 41 3 3DN- : ENGR 62 3 3DRE : F/M 19 3 1A3D : INSP 0 0 D 2DN- : A/O 1 0 D 1AN- : MECH 84 3 2D3D

TABLE 51. RELATED MECHANICS CONTINUED

	MEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY THE PURPOSE OF A CLUTCH AND ITS PROPER USE	50	60	35	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	41	42	57	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	81	81	76	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	42	67	11	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	2	0	H H L	3 2 0	1 1 0	3 2 0	14	12	0
ALARM OPERATOR	15	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	81	H H H	3 3 3	1 1 1	4 3 4	1	1	1
IDENTIFY THE PURPOSE OF A DIFFERENTIAL	42	52	31	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	36	35	46	H H H	3 3 3	1 1 1	4 3 3	1	1	1
ENGINEER	71	69	74	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	34	58	10	H H M	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	84	81	H H H	3 3 3	1 1 1	3 3 3	1	1	1
IDENTIFY TRANSIMISSION OF POWER FROM FOOT PEDAL TO THE BRAKE SHOE OR DRUM CN MECHANICAL, BCOSTER ACTUATED, FULL HYDRAULIC, AND ON FLLL AIR TYPES	40	46	30	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	29	36	40	H H H	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	62	70	70	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	36	48	11	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	0	0	H L L	3 0 0	1 0 0	3 0 0	14	0	0
ALARM OPERATOR	8	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	89	81	H H H	3 3 3	1 1 1	3 3 4	1	1	1

* IDENTIFY THE PURPOSE OF A CLUTCH AND ITS PROPER USE Involves an understanding of the functional relationship of the clutch to the motor, transmission, propeller shaft and differential plus an understanding of the detrimental effect of improper use. Mechanics and engineers are equally involved in this task; the mechanic, however, has received in-depth training, while the engineer has received only basic and general training.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	3	0	1	8	1	0	1	3	0	0	0
BASIC-GENERAL	27	5	0	7	26	16	1	6	20	3	0	2
IN-DEPTH	13	5	1	4	18	11	6	9	12	2	1	1

Statewide Advisory Committee recommendations
CAP 60 3 3DR- : ENGR 77 3 3DRE : F/M 22 3 1A3D : INDP 0 2 D 2DR- : A/O 2 0 D 1AR- : MECH 84 3 3DRE

* IDENTIFY THE PURPOSE OF A DIFFERENTIAL Requires a knowledge of the transmission of power through the various systems and the distribution of same to the rear wheels by the differential. In all size departments, the mechanics and engineers are equally involved in this task and operate at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	0	0	9	4	0	3	1	0	0	0
BASIC-GENERAL	25	4	0	6	23	12	1	5	19	4	1	1
IN-DEPTH	10	5	1	4	12	10	5	6	4	6	0	1

Statewide Advisory Committee recommendations
CAP 43 3 3DR- : ENGR 73 3 3DRE : F/M 20 3 1A3D : INDP 0 0 D 2DR- : A/O 0 0 D 1AR- : MECH 84 3 2D3D

* IDENTIFY THE TRANSMISSION OF POWER FROM THE FOOT PEDAL TO THE BRAKE SHOE OR DRUM, ON MECHANICAL TYPE, ON BOOSTER ACTUATED TYPE, ON FULL HYDRAULIC TYPE, AND ON FULL AIR TYPE Deals with the understanding necessary to describe the relationship of each part to the other parts and to the system as a whole, in the various types of braking systems. In all size departments, the mechanics and engineers are almost equally involved and operate at a high rate of frequency when performing this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	2	0	0	6	1	0	1	1	0	0	0
BASIC-GENERAL	22	4	0	5	22	10	1	6	17	4	1	1
IN-DEPTH	10	5	1	3	12	8	5	6	7	7	0	1

Statewide Advisory Committee recommendations
CAP 38 3 3DR- : ENGR 69 3 3DRE : F/M 20 3 1A3D : INDP 0 0 D 2DR- : A/O 1 0 D 1AR- : MECH 84 3 3DRE

TABLE 51. RELATED MECHANICS CONTINUED

	PEN			FRQ	T-K	A-S	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S	M	L
IDENTIFY PROPER USE OF HAND BRAKE	54	60	44	H H H	3 3 3	1 1 1	3 3 3	1	1	1
CAPTAIN	42	40	50	H H M	3 3 3	1 1 1	3 3 3	1	1	1
ENGINEER	83	80	77	H H H	3 3 3	1 1 1	3 3 3	1	1	1
FIREMAN	50	69	31	H H H	3 3 3	1 1 1	3 3 3	1	1	1
INSPECTOR	4	2	10	H H H	3 2 3	1 1 1	3 3 2	14	12	1
ALARM OPERATOR	15	0	0	H L L	3 0 0	1 0 0	3 0 0	1	0	0
MECHANIC	95	84	79	H H H	3 3 3	1 1 1	4 3 4	1	1	1

* IDENTIFY PROPER USE OF THE HAND BRAKE Requires a knowledge of the mechanical function and an appreciation for the safety purposes intended in the engineering conception of the hand brake. The mechanics and engineers are required to identify hand brake use at a high rate of frequency when performing this task. The captains and firemen are also substantially involved in this procedure.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	0	7	1	0	0	2	0	0	0
BASIC-GENERAL	33	4	0	5	27	12	1	7	20	9	1	0
IN-DEPTH	14	5	1	3	18	12	6	9	6	1	0	1

Statewide Advisory Committee recommendations

CAP 47 3 3DN- : ENGR 78 3 3DRE : F/M 39 3 1A3D : INSP 8 3 L 2DN- : A/O 2 0 D 1AN- : MECH 82 3 2D3D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS AND RESPONSIBILITIES

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
REVIEW MODERN METHODS OF FIRE PREVENTION AND PROTECTION THROUGH THE MEDIUM OF MAGAZINES, BOOKS, NEWS LETTERS, RECORDS OF FIRES, AND THEIR CAUSES	100	93	99	H H H	2 2 2	1 1 1	3 3 3	3 3 3	1 1 1
CHIEF	97	100	94	H H H	2 3 2	1 1 1	3 3 3	3 4 3	1 1 1
ASSISTANT CHIEF	100	100	89	H H H	2 2 2	1 1 1	3 3 3	3 4 3	1 1 1
BATTALION CHIEF	100	99	100	H H H	2 2 2	1 1 1	3 3 3	3 4 3	1 1 1
CAPTAIN	100	91	99	H H H	2 2 2	1 1 1	3 3 3	3 3 3	1 1 1
RULES, REGULATIONS, AND ORDERS	99	92	99	H H H	1 1 1	1 1 1	2 2 2	3 4 4	1 1 1
CHIEF	100	96	100	H H H	3 3 3	1 1 1	2 2 2	4 4 3	1 1 1
ASSISTANT CHIEF	97	100	100	H H H	3 3 1	1 1 1	2 2 2	4 4 4	1 1 1
BATTALION CHIEF	100	99	100	H H H	1 1 1	1 1 1	2 3 2	4 4 4	1 1 1
CAPTAIN	99	90	99	H H H	1 1 2	1 1 1	2 2 2	3 4 4	1 1 1
EFFICIENT OPERATIONS OF PERSONNEL AND EQUIPMENT	99	91	98	H H H	2 3 2	1 1 1	3 3 3	4 4 4	1 1 1
CHIEF	100	100	100	H H H	3 3 3	1 1 1	3 3 2	4 4 4	1 1 1
ASSISTANT CHIEF	97	97	99	H H H	3 3 2	1 1 1	2 3 3	4 4 4	1 1 1
BATTALION CHIEF	100	99	100	H H H	2 3 2	2 1 1	3 3 3	4 4 4	1 1 1
CAPTAIN	99	89	98	H H H	2 2 2	1 1 1	3 3 3	3 4 4	1 1 1

* REVIEW MODERN METHODS OF FIRE PREVENTION AND PROTECTION THROUGH THE MEDIUM OF MAGAZINES, BOOKS, NEWS LETTERS, AND RECORDS OF FIRES AND THEIR CAUSES Involves maintaining and improving knowledge of current trends and developments related to the profession. It appears that a great deal of effort is being expended in this category by officers in all departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	3	0	2	6	0	1	1	3	0	0	0
BASIC-GENERAL	42	3	1	10	19	2	1	4	51	0	0	0
IN-DEPTH	21	4	2	15	34	4	3	10	28	3	1	0

Statewide Advisory Committee recommendations

CHIEF 93 2 3CME : ASST CHIEF 95 2 3CME : BATTN CHIEF 99 2 3CME : CAP 98 2 2C3C

* RULES, REGULATIONS AND ORDERS Involves developing, reviewing, updating, interpreting, applying, enforcing and complying with rules and regulations; and formulating, issuing, receiving, enforcing and complying with orders. All of the personnel operate under rules, regulations and orders at a high rate of frequency, regardless of department size. The supervisorial function of the chiefs and assistant chiefs requires them to be responsible for the formulation of policies and programs, whereas the battalion chiefs and captains exercise their responsibility by gaining compliance with plans and procedures.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	3	0	2	23	0	1	1	3	0	0	0
BASIC-GENERAL	45	10	5	15	33	5	4	4	28	0	0	0
IN-DEPTH	36	15	9	20	32	15	9	14	67	10	4	0

Statewide Advisory Committee recommendations

CHIEF 99 3 3CRE : ASST CHIEF 98 3 3CRE : BATTN CHIEF 99 1 2CME : CAP 98 1 1CME

* EFFICIENT OPERATIONS OF PERSONNEL AND EQUIPMENT Involves evaluating current procedures and developing, testing and implementing revised procedures as necessary to provide for peak efficiency. The chiefs and assistant chiefs determine the objectives and formulate the policies, while the battalion chiefs and captains generally identify and evaluate desirable practices.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	3	0	0	5	5	1	1	2	0	0	0
BASIC-GENERAL	40	21	5	27	16	8	1	7	30	3	22	1
IN-DEPTH	42	27	15	28	59	44	19	39	64	20	5	13

Statewide Advisory Committee recommendations

CHIEF 100 3 3CRE : ASST CHIEF 98 3 3DRE : BATTN CHIEF 99 2 2DME : CAP 97 2 1D2D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ			S-K			D-M			H-A			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
ESTIMATES OF SITUATIONS AT FIRES AND ISSUANCE OF NECESSARY ORDERS	97	96	98	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CHIEF	100	100	100	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	14	1	1
ASSISTANT CHIEF	97	97	98	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
BATTALION CHIEF	100	96	100	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CAPTAIN	96	96	98	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
MAINTAIN DISCIPLINE AND RESPECT OF SUBORDINATES	99	98	91	H	H	H	2	2	2	1	1	1	2	2	2	4	4	3	1	1	1
CHIEF	100	100	100	H	H	H	3	3	3	1	1	1	2	2	2	4	4	4	1	1	1
ASSISTANT CHIEF	100	100	100	H	H	H	3	2	1	1	1	1	2	2	2	4	3	3	1	1	1
BATTALION CHIEF	89	99	100	H	H	H	1	1	2	1	1	1	2	2	2	4	4	4	4	1	1
CAPTAIN	99	97	90	H	H	H	2	1	2	1	1	3	2	2	2	3	4	4	1	1	1
PLAN, INITIATE, AND CARRY OUT LONG RANGE PROGRAMS IN FIRE DEPARTMENT ADMINISTRATION, EMPLOYEE TRAINING AND FIRE PREVENTION	65	61	46	H	H	H	3	3	3	3	3	3	3	3	3	4	4	4	1	1	1
CHIEF	97	100	100	H	H	H	3	3	3	1	1	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	94	94	72	H	H	H	3	3	3	3	3	3	3	3	3	4	4	4	1	14	1
BATTALION CHIEF	93	85	55	H	H	H	3	3	2	3	3	3	3	3	3	4	4	4	1	1	1
CAPTAIN	50	51	43	H	H	H	3	2	2	3	3	3	3	3	3	3	4	3	1	1	1

* ESTIMATES OF SITUATIONS AT FIRES AND ISSUANCE OF NECESSARY ORDERS Involves sizing up situations, developing operational plans, issuing orders, and evaluating results of efforts, under the stress of emergency conditions. All of the ranks studied exercise this ability at a high rate of frequency at the same supervisorial level; a critical time factor is involved in decision-making.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	3	2	3	7	6	0	6	0	0	0	0
BASIC-GENERAL	20	13	3	10	26	12	7	8	6	2	0	2
IN-DEPTH	64	43	11	46	62	50	18	42	82	31	27	11

Statewide Advisory Committee recommendations

CHIEF 100 2 3CRE : ASST CHIEF 97 2 3DRE : BATTN CHIEF 99 2 3DME : CAP 97 2 2D3D

* MAINTAIN DISCIPLINE AND RESPECT OF SUBORDINATES Involves understanding, appreciating and applying the principles of discipline, human relations and leadership; and evaluating the quality and results of these factors. This is a task in which all of the ranks are equally involved. The chiefs in all size departments and the assistant chiefs in small departments exercise the responsibility of formulating policies and programs in this area. All ranks accomplish this objective, by working with and influencing people.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	3	1	6	18	6	0	3	9	0	0	0
BASIC-GENERAL	33	19	4	17	28	14	9	14	23	9	0	2
IN-DEPTH	36	21	16	26	41	35	17	30	55	9	23	8

Statewide Advisory Committee recommendations

CHIEF 100 3 3DME : ASST CHIEF 100 2 3DME : BATTN CHIEF 99 2 3DME : CAP 92 2 1D2D

* PLAN, INITIATE AND CARRY OUT LONG-RANGE PROGRAMS IN FIRE DEPARTMENT ADMINISTRATION, EMPLOYEE TRAINING AND FIRE PREVENTION Involves estimating and evaluating future trends and requirements and the changes that they indicate in fire department facilities, personnel and methods of operation. Includes developing plans, initiating changes, and evaluating results. In all of the departments, the chiefs make the decisions for long-range programs. Fifty percent of the captains in all departments and 50 percent of the battalion chiefs in large departments are not involved in the long-range planning of the department.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	0	2	10	6	1	3	7	6	0	1
BASIC-GENERAL	21	9	3	13	19	5	6	8	26	1	0	1
IN-DEPTH	32	17	13	19	27	19	14	10	12	9	2	1

Statewide Advisory Committee recommendations

CHIEF 98 3 3DME : ASST CHIEF 83 3 3DME : BATTN CHIEF 64 3 3DRE : CAP 45 2 1D2D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ			S-K			D-M			H-A			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
PLAN, ASSIGN, AND CCCRDINATE ACTIVITIES PERFORMED BY A LARGE GROUP OF EMPLCYEES IN VARIED FIRE FIGHTING WORK	60	56	58	H	H	H	3	2	3	2	1	1	3	3	3	4	4	4	1	1	1
CHIEF	87	96	94	H	H	H	3	3	3	1	1	2	3	3	3	4	4	4	4	1	1
ASSISTANT CHIEF	97	97	91	H	H	H	3	3	3	2	1	2	3	3	3	4	4	4	1	1	1
BATTALION CHIEF	85	93	99	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CAPTAIN	45	43	51	H	H	H	2	2	2	1	3	3	3	3	2	3	4	4	1	1	1
PREPARE BUDGETS	30	37	54	L	L	L	3	3	3	3	3	3	3	3	3	4	3	4	1	1	1
CHIEF	97	100	100	L	L	L	3	3	3	3	1	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	69	61	79	L	L	L	2	3	3	3	3	3	3	3	3	3	3	1	1	1	1
BATTALION CHIEF	59	39	43	L	L	L	2	2	2	3	3	3	3	3	3	4	3	4	1	1	1
CAPTAIN	6	30	53	L	L	L	1	2	1	3	3	3	3	3	3	3	3	3	1	1	1
LEGISLATION CONCERNING THE FIRE SERVICE	22	16	24	L	L	L	2	2	3	3	3	3	3	3	1	1	3	3	1	1	1
CHIEF	82	89	100	L	L	M	2	3	2	3	1	1	3	3	1	1	1	3	1	1	1
ASSISTANT CHIEF	47	42	30	L	M	L	2	2	3	3	3	3	2	3	1	1	2	3	1	1	1
BATTALION CHIEF	67	26	1	L	H	L	2	2	3	3	1	3	1	3	3	3	3	3	1	1	14
CAPTAIN	3	7	26	L	L	L	0	2	2	0	3	3	0	3	1	0	1	3	0	1	12

* PLAN, ASSIGN AND COORDINATE ACTIVITIES PERFORMED BY A LARGE GROUP OF EMPLOYEES IN VARIED FIRE FIGHTING WORK Involves routine activities as well as fire and emergency activities. May include such special activities as fire prevention campaigns, large training exercises, and the like. Less than 50 percent of the captains in all departments engage in activities under this category. Battalion chiefs in all departments work under critical time limitations when rendering decisions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	2	1	2	2	1	1	1	0	0	0	0
BASIC-GENERAL	20	9	1	14	15	9	3	5	41	0	22	1
IN-DEPTH	29	24	11	25	31	27	16	22	16	3	1	7

Statewide Advisory Committee recommendations

CHIEF 93 3 3DME : ASST CHIEF 94 3 3DME : BATTN CHIEF 96 2 2DME : CAP 49 2 1DME

* PREPARE BUDGETS Chiefs of departments usually prepare annual budgets for the entire department following the system and guidelines as set forth by legislators and administrators. Subordinate officers may prepare annual budgets for their respective divisions, bureaus, battalions, or stations. The chiefs in all departments generally make the decisions necessary in the preparation of budgets.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	5	1	1	0	9	6	0	0
BASIC-GENERAL	8	2	3	1	23	9	3	1	39	1	22	0
IN-DEPTH	9	3	5	3	7	3	3	3	3	0	0	0

Statewide Advisory Committee recommendations

CHIEF 98 3 3DME : ASST CHIEF 72 3 2D3D : BATTN CHIEF 45 2 2DME : CAP 44 1 1D2D

* LEGISLATION CONCERNING THE FIRE SERVICE Involves keeping abreast of proposed and enacted federal and state legislation and contacting legislators to urge support or opposition of proposed legislation. Involves preparing local ordinances for submission to legislative body or its staff and assisting legislative body or its staff in deciding upon legislation affecting fire protection. The chiefs in all departments and the battalion chiefs in small departments are most involved with legislation concerning the fire service.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	2	2	2	3	0	0	0	6	6	0	0
BASIC-GENERAL	4	2	1	1	5	2	3	0	16	0	0	0
IN-DEPTH	4	2	2	3	2	1	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 90 2 2D3D : ASST CHIEF 38 2 1DME : BATTN CHIEF 13 2 1DME : CAP 20 2 1DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
ASSIGN PERSONNEL	72	70	82	H H H	2 2 1	1 1 1	3 3 2	3 3 3	1 1 1
CHIEF	97	89	94	H H H	3 3 1	1 1 1	2 2 3	4 3 3	1 1 1
ASSISTANT CHIEF	78	94	81	H H H	2 1 1	1 1 1	3 2 2	3 3 3	1 1 1
BATTALION CHIEF	93	92	75	H H H	2 2 1	1 1 1	3 3 2	3 3 3	1 1 1
CAPTAIN	62	63	83	H H H	2 2 2	1 1 1	3 3 2	3 3 3	1 1 1
GENERAL ROUTINE AND MAINTENANCE WORK	80	80	50	H H H	1 1 1	1 1 1	2 3 1	3 3 3	1 1 1
CHIEF	62	39	44	H H H	1 3 3	1 1 1	1 3 3	3 3 3	1 1 1
ASSISTANT CHIEF	47	61	35	H H H	1 1 2	1 1 1	3 3 3	3 3 3	1 1 1
BATTALION CHIEF	93	62	49	H H H	1 1 1	1 1 3	2 3 2	3 3 3	1 1 1
CAPTAIN	88	87	51	H H H	1 1 1	1 1 1	1 2 1	3 3 3	1 1 1
MAINTENANCE AND REPLACEMENT OF BUILDINGS	59	36	27	H H H	2 2 3	1 1 1	3 3 3	3 3 3	1 1 1
CHIEF	87	79	69	L L H	2 3 3	1 1 1	3 3 3	3 4 3	1 1 1
ASSISTANT CHIEF	59	58	28	H H H	3 2 2	3 3 3	3 3 3	3 3 3	1 1 1
BATTALION CHIEF	63	52	26	H H H	1 1 2	3 1 3	3 3 1	3 3 3	1 1 1
CAPTAIN	53	29	27	H H H	2 1 2	1 3 3	3 1 1	3 3 3	1 1 1

• ASSIGN PERSONNEL Involves assigning personnel to various bureaus, divisions, stations and platoons and maintaining assignment records, as well as assigning personnel to specific duties and details. All of the ranks are largely involved in the assignment of personnel. Chiefs in small and medium size departments indicate that they formulate objectives and policies for the assignment of personnel, whereas chiefs in large departments must gain compliance for their plans and procedures.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	0	0	1	13	0	0	1	12	0	0	0
BASIC-GENERAL	37	11	4	15	31	4	1	2	55	8	22	4
IN-DEPTH	15	6	4	8	17	9	6	10	13	10	4	0

Statewide Advisory Committee recommendations

CHIEF 93 3 3DME : ASST CHIEF 84 1 3DME : BATTN CHIEF 79 2 2DME : CAP 73 2 1DME

• GENERAL ROUTINE AND MAINTENANCE WORK Involves inspecting and evaluating in order to determine work which must be performed, following prescribed procedures; planning, organizing and supervising routine work; and maintaining necessary records. The battalion chief and the captain in the small size departments and the captain in medium size departments are predominantly involved in this task. In large size departments, all ranks indicate an approximate involvement of 50 percent of the personnel.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	17	0	0	2	22	0	0	3	9	0	0	0
BASIC-GENERAL	40	5	3	8	44	6	6	6	32	1	0	0
IN-DEPTH	18	6	3	4	10	1	1	1	9	4	0	5

Statewide Advisory Committee recommendations

CHIEF 49 3 3DME : ASST CHIEF 45 1 2DME : BATTN CHIEF 57 1 2DME : CAP 58 1 2D3D

• MAINTENANCE AND REPLACEMENT OF BUILDINGS Involves inspecting buildings, budgeting funds for maintenance and replacement, planning and scheduling maintenance, supervising personnel and evaluating results. Chiefs in all departments are primarily involved in this administrative function. The chiefs in the small and medium size departments operate at a low rate of frequency, while in larger departments, they operate at a high rate of frequency. Some of the captains in small departments and battalion chiefs in medium size departments exercise the same level of decision-making responsibility as the chiefs.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	0	1	5	0	0	0	2	0	0	0
BASIC-GENERAL	34	5	1	3	20	1	0	0	25	0	0	0
IN-DEPTH	10	3	6	4	2	0	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 79 3 3DME : ASST CHIEF 43 2 2DME : BATTN CHIEF 34 1 2DME : CAP 30 2 1D2D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	PEN			FRQ	S-K	D-M	M-A	PET	W-D		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
MAINTENANCE AND REPLACEMENT OF EQUIPMENT	61	52	32	M M M	2 2 2	1 1 1	3 3 3	3 3 3	1	1	1
CHIEF	92	86	69	M L M	2 3 3	1 1 1	3 3 3	3 3 4	1	1	1
ASSISTANT CHIEF	75	69	32	M M M	3 3 2	3 3 1	3 3 3	3 3 3	1	1	1
BATTALION CHIEF	81	64	26	M M M	2 3 2	1 1 3	3 3 3	3 3 3	1	1	1
CAPTAIN	50	46	32	M M M	2 2 2	1 1 3	3 1 3	3 3 3	1	1	1
INSTALLATIONS AND CONSTRUCTION	26	26	7	L L L	2 3 1	1 1 1	3 3 3	3 3 3	1	1	1
CHIEF	79	64	63	L L L	2 3 3	1 1 1	3 3 3	3 3 3	1	1	1
ASSISTANT CHIEF	47	44	22	L L M	2 3 1	3 3 3	3 3 3	3 1 3	1	1	1
BATTALION CHIEF	26	39	0	M M L	1 3 0	3 3 0	3 3 0	3 3 0	1	1	0
CAPTAIN	11	20	7	M M L	2 2 1	1 3 3	3 1 4	3 3 2	1	1	12
ALARMS AND COMMUNICATIONS	63	50	39	M M M	2 2 1	1 1 1	3 3 3	4 3 3	1	1	1
CHIEF	82	75	63	M M M	3 2 3	1 1 1	3 3 3	4 3 4	1	1	1
ASSISTANT CHIEF	91	69	26	M M M	3 3 1	2 2 1	3 3 3	4 3 3	1	1	1
BATTALION CHIEF	70	78	41	M M M	2 1 1	2 3 2	3 3 3	4 4 4	1	1	1
CAPTAIN	54	41	39	M M M	2 2 1	2 2 2	3 3 3	3 3 4	1	1	1

* MAINTENANCE AND REPLACEMENT OF EQUIPMENT Involves inspecting equipment, budgeting funds for maintenance and replacement, researching and evaluating currently used and other available equipment, planning and scheduling maintenance and replacement, supervising personnel, and evaluating results. The decisions on maintenance and replacement of equipment are usually made by the chiefs in all departments. In small and medium departments, the battalion chiefs and captains also make decisions of this nature.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	14	0	1	3	2	0	0	0
BASIC-GENERAL	37	6	1	12	11	4	3	3	29	6	0	0
IN-DEPTH	10	6	4	6	4	2	2	2	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 83 3 3DHS : ASST CHIEF 52 3 3DHS : BATTN CHIEF 38 2 2D3D : CAP 36 2 1D2D

* INSTALLATIONS AND CONSTRUCTION Includes installing equipment on motor fire apparatus and other vehicles and in fire stations and other departmental buildings; and constructing fire apparatus and equipment, training facilities, and buildings. Chiefs usually make the planning decisions involving installations and construction. In the large departments, the battalion chiefs and captains do not participate in this assignment.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	4	0	0	0	6	6	0	0
BASIC-GENERAL	12	4	1	2	14	7	4	4	1	0	0	0
IN-DEPTH	7	3	4	4	2	1	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 70 3 3DHS : ASST CHIEF 34 2 2DHS : BATTN CHIEF 9 1 2DHS : CAP 9 2 1D2D

* ALARMS AND COMMUNICATIONS Includes supervising the operation of such devices as public and private fire alarm systems, telephone systems, and radio systems. Involves inspecting such equipment; researching new developments; planning for acquisition, maintenance, and replacement; and budgeting necessary funds. The chiefs in all size departments and the assistant chiefs in the large departments indicate that they have a reasonable time limit in which to arrive at decisions, while in all other ranks and size departments, time is critical. Fewer captains than chiefs are involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	2	7	3	0	3	0	0	0	0
BASIC-GENERAL	28	6	2	8	20	4	1	1	9	0	0	0
IN-DEPTH	25	9	4	14	22	9	3	11	29	6	0	0

Statewide Advisory Committee recommendations

CHIEF 74 3 3DHS : ASST CHIEF 51 3 3DHS : BATTN CHIEF 30 1 2D3D : CAP 41 2 1D2D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
PERSONNEL TRAINING	87	90	92	H H H	3 3 2	1 1 1	3 2 2	4 4 4	1	1	1
CHIEF	82	75	63	H H H	3 3 3	1 1 1	2 2 2	4 4 4	4	1	1
ASSISTANT CHIEF	81	83	47	H H H	3 3 3	1 1 1	3 3 3	4 4 3	1	1	1
BATTALION CHIEF	96	91	70	H H H	3 3 2	1 1 1	2 3 2	4 4 3	1	1	1
CAPTAIN	88	92	97	H H H	1 1 2	1 1 1	3 2 2	4 4 4	1	1	1
UTILITY FRANCHISE GRANTS	4	5	1	L L H	2 2 3	1 1 3	3 3 3	1 3 3	3	1	1
CHIEF	18	11	19	L M L	2 3 3	1 1 3	3 3 3	1 3 2	13	1	1
ASSISTANT CHIEF	6	3	21	L L H	3 2 3	3 1 3	4 4 3	3 2 3	23	1	1
BATTALION CHIEF	11	15	0	L H L	2 2 0	3 3 0	4 2 0	1 3 0	0	1	0
CAPTAIN	0	2	0	L H L	0 3 0	0 3 0	0 3 0	0 4 0	0	1	0
PROGRAM FOR EMERGENCY DUTY, INCLUDING MUTUAL AID	49	39	21	H H H	3 2 1	1 1 3	3 3 3	4 3 4	1	1	1
CHIEF	100	100	100	H H H	3 3 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	66	83	53	H H H	3 2 2	3 3 3	3 3 3	4 3 3	1	1	1
BATTALION CHIEF	70	68	58	H H H	2 1 1	2 3 3	3 3 3	3 3 4	1	1	1
CAPTAIN	34	26	15	M H M	2 2 2	2 2 4	3 3 3	3 3 3	1	1	1

* PERSONNEL TRAINING Involves evaluating training levels currently achieved and the desired objectives; and planning, organizing, scheduling, conducting, and evaluating training activities for subordinates. The captains in the large departments carry the major responsibility for this category. In the medium and small departments, it is primarily the duty of the battalion chief. Decisions for training personnel are made by all ranks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	3	0	0	3	0	0	0	0
BASIC-GENERAL	27	10	4	16	26	17	8	19	23	11	1	10
IN-DEPTH	48	28	12	40	58	40	19	41	67	14	28	20

Statewide Advisory Committee recommendations

CHIEF 75 3 3CRE : ASST CHIEF 64 3 3DME : BATTN CHIEF 77 3 3DME : CAP 95 1 1D2D

* UTILITY FRANCHISE GRANTS Involves advising legislative bodies regarding the fire protection aspects of franchise contracts with water and other utility agencies. Little is being done in this category by any of the fire department officers.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	0	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	1	0	0	0	4	0	0	0	1	0	0	0
IN-DEPTH	0	0	0	0	1	1	1	1	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 16 3 1D2D : ASST CHIEF 13 3 1DN- : BATTN CHIEF 3 2 1DN- : CAP 0 1 D 1DN-

* PROGRAM FOR EMERGENCY DUTY, INCLUDING MUTUAL AID Involves developing plans for recalling and assigning off-duty personnel, reactivating reserve equipment, and providing special services during periods of extreme fire hazard, during serious fires and during other emergencies and/or disasters. Mutual aid planning and supervision is done by the chief in departments of all sizes.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	1	7	4	1	4	3	0	0	0
BASIC-GENERAL	18	4	1	4	17	7	3	3	8	0	0	0
IN-DEPTH	22	7	6	11	10	3	2	3	10	1	0	5

Statewide Advisory Committee recommendations

CHIEF 100 3 3CME : ASST CHIEF 64 2 3CME : BATTN CHIEF 61 1 2CME : CAP 19 2 1DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
DATA FOR APPARATUS AND EQUIPMENT SPECIFICATIONS	36	27	10	L L L	2 2 2	3 3 3	3 3 3	3 3 3	1 1 1
CHIEF	90	100	88	L L L	2 3 3	1 1 1	3 3 3	4 3 4	1 1 1
ASSISTANT CHIEF	72	53	43	L L L	2 2 2	3 3 3	3 3 3	3 3 3	1 1 1
BATTALION CHIEF	48	42	14	L L L	2 2 2	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	17	18	7	L H L	2 2 2	3 3 3	3 3 3	3 3 3	1 1 12
RECORD-KEEPING SYSTEMS IN STATICNS AND BUREALS	82	77	90	H H H	1 3 1	1 1 1	3 3 3	3 3 3	1 1 1
CHIEF	100	79	63	H H H	1 3 3	1 1 1	3 3 3	4 4 3	1 1 1
ASSISTANT CHIEF	78	89	52	H H H	3 2 1	1 1 1	3 3 3	3 3 3	1 1 1
BATTALION CHIEF	93	82	95	H H H	2 3 1	1 1 1	3 3 3	3 3 3	1 1 1
CAPTAIN	74	75	92	H H H	1 1 1	1 1 1	3 3 1	3 3 3	1 1 1
BUDGET CONTROL	34	34	14	H H H	1 1 1	1 1 1	3 3 3	3 3 4	1 1 1
CHIEF	97	100	88	H H H	1 1 1	1 1 1	3 3 3	3 4 4	1 1 1
ASSISTANT CHIEF	53	64	52	H H H	1 1 2	1 3 1	3 3 3	3 3 4	1 1 1
BATTALION CHIEF	30	49	5	H H H	1 2 3	3 1 3	3 3 3	1 3 4	12 1 1
CAPTAIN	18	24	13	H H H	2 1 2	1 3 1	3 2 1	3 3 3	1 1 1

* DATA FOR APPARATUS AND EQUIPMENT SPECIFICATIONS Involves analyzing, interpreting, and applying standard specifications; and developing and applying specifications for apparatus and equipment based upon local needs and conditions. The chief is responsible for making final decisions in this area, and all other ranks present the facts for decision. This is performed at a low rate of frequency. Fewer than 20 percent of the captains in all size departments are involved in this task.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	0	5	1	0	0	0	0	0	0
BASIC-GENERAL	18	5	0	8	12	4	1	4	8	6	0	0
IN-DEPTH	7	3	2	4	8	2	1	1	1	0	0	0

Statewide Advisory Committee recommendations

CHIEF 93 3 3DME : ASST CHIEF 53 2 3DME : BATTN CHIEF 22 2 2DME : CAP 10 2 1D2D

* RECORD-KEEPING SYSTEMS IN STATIONS AND BUREAUS Involves developing and maintaining record-keeping systems, evaluating such systems in use, and proposing and initiating indicated changes; interpreting and analyzing data gathered and recorded; and supervising record-keeping personnel. In the small departments this category is the responsibility of the chief and his assistant. In the large department, it is handled by the battalion chief and the captain.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	14	1	1	2	11	5	1	0	12	0	0	0
BASIC-GENERAL	40	7	1	12	47	16	6	9	72	8	22	5
IN-DEPTH	20	8	4	9	17	8	6	8	6	4	4	0

Statewide Advisory Committee recommendations

CHIEF 83 3 3DME : ASST CHIEF 60 2 2D3D : BATTN CHIEF 93 2 2DME : CAP 87 1 1D2C

* BUDGET CONTROL Fire department officers should know the principles of budget control since this is a responsibility of management. Budget control is a continuous process for the fire department officer in planning and preparation, justification, and long-range financial planning. Over 90 percent of all chiefs and approximately 50 percent of the assistant chiefs are involved in this responsibility. They formulate policy and make decisions concerning fiscal matters.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	1	0	0	4	1	1	0	4	0	0	0
BASIC-GENERAL	13	3	2	3	18	3	4	0	8	6	0	0
IN-DEPTH	5	1	3	1	6	4	3	0	1	1	1	0

Statewide Advisory Committee recommendations

CHIEF 96 1 3DME : ASST CHIEF 56 1 3DME : BATTN CHIEF 14 2 2D3D : CAP 15 2 1D2D

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
ACT AS REPRESENTATIVE OF THE FIRE DEPARTMENT	87	76	68	H H H	2 2 2	1 1 1	2 2 2	3 3 4	1 1 1
CHIEF	100	100	94	H H H	3 3 3	1 1 1	2 2 2	3 4 4	1 1 1
ASSISTANT CHIEF	88	94	93	H H H	2 2 3	1 1 1	2 2 1	3 4 4	1 1 1
BATTALION CHIEF	93	84	71	H H H	1 2 2	1 1 3	2 2 2	3 3 2	1 1 1
CAPTAIN	83	72	66	H H H	2 2 2	1 1 1	2 2 1	3 3 3	1 1 1
MAINTENANCE, EXPANSION, MODERNIZATION OF FIRE ALARM SYSTEMS	22	18	1	L H H	2 3 2	1 3 1	3 3 3	4 4 3	1 1 1
CHIEF	64	64	50	L M M	3 3 3	1 1 1	3 3 3	4 3 3	1 1 1
ASSISTANT CHIEF	41	36	19	M M H	2 2 2	1 3 3	3 3 3	4 3 3	1 1 1
BATTALION CHIEF	30	36	0	H H L	2 2 0	1 1 0	3 3 0	4 3 0	1 1 0
CAPTAIN	9	10	0	H H L	1 2 0	1 1 0	3 3 0	4 4 0	1 1 0
RELATIONS BETWEEN BUREAUS AND DIVISIONS	38	35	48	H H H	2 3 3	1 1 1	2 2 2	4 3 3	1 1 1
CHIEF	90	93	94	H H H	2 3 3	1 1 1	2 2 2	4 3 4	1 1 1
ASSISTANT CHIEF	69	72	75	H H H	2 3 3	3 3 1	1 2 2	4 3 3	1 1 1
BATTALION CHIEF	52	72	58	H H H	3 2 1	3 1 3	3 2 2	4 3 3	1 1 1
CAPTAIN	21	22	45	H H H	2 2 1	3 1 3	2 2 2	3 3 3	1 1 1

* ACT AS REPRESENTATIVE OF THE FIRE DEPARTMENT Involves representing department both officially and unofficially at professional and community organization functions, at conferences and workshops, on advisory and other committees, at legislative hearings and proceedings, and at staff and administrative meetings. There is indication that all of the officers feel that they represent the department to a high degree.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	8	0	0	0	10	0	1	0	3	0	0	0
BASIC-GENERAL	40	13	2	12	28	11	7	9	48	7	22	0
IN-DEPTH	24	10	7	14	26	11	7	13	13	4	1	5

Statewide Advisory Committee recommendations

CHIEF 99 3 3CME : ASST CHIEF 92 2 3CME : BATTN CHIEF 84 2 3CME : CAP 74 2 1C3C

* MAINTENANCE, EXPANSION, MODERNIZATION OF FIRE ALARM SYSTEMS Involves evaluating, planning necessary activities, budgeting, and, in certain cases, supervising maintenance and construction personnel. The officers in the large departments are more inclined to have specialized duties than those in the medium and small size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	1	0	0	1	0	0	0	0
BASIC-GENERAL	7	1	0	2	5	1	1	2	0	0	0	0
IN-DEPTH	10	5	3	7	9	4	1	4	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 60 3 3DRE : ASST CHIEF 29 2 3DME : BATTN CHIEF 9 2 2DME : CAP 3 1 1D2D

* RELATIONS BETWEEN BUREAUS AND DIVISIONS Chiefs of department are usually concerned with developing an organizational structure which will provide for a maximum of harmony and cooperation throughout the department. Other officers are usually concerned with promoting and participating in cooperative efforts with their superiors, colleagues and subordinates.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	1	1	4	1	2	0	0	0	0	0
BASIC-GENERAL	16	2	1	2	17	3	5	2	33	1	22	0
IN-DEPTH	11	6	7	8	10	8	5	3	5	2	1	0

Statewide Advisory Committee recommendations

CHIEF 92 3 3CRE : ASST CHIEF 73 3 3CRE : BATTN CHIEF 59 2 3CME : CAP 39 2 2DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
RELATIONS BETWEEN INTRA-DEPARTMENTAL BUREAUS AND DIVISIONS	42	55	44	H H H	2 3 1	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	90	96	88	H H H	3 3 3	1 1 1	2 2 2	4 3 3	1 1 1
ASSISTANT CHIEF	63	81	73	H H H	2 2 3	3 3 1	2 1 2	3 3 4	1 1 1
BATTALION CHIEF	56	75	35	H H H	2 1 2	3 1 3	3 2 2	3 3 3	1 1 1
CAPTAIN	27	46	43	H H H	2 2 1	3 1 1	1 2 2	3 3 3	1 1 1
RELATIONS BETWEEN INTER-DEPARTMENTAL DEPARTMENTS AND JURISDICTIONS	40	41	17	H H H	2 3 3	3 1 1	2 2 2	3 3 3	1 1 1
CHIEF	85	96	94	H H H	2 3 3	1 1 1	3 2 2	4 3 4	1 1 1
ASSISTANT CHIEF	56	81	56	H H H	2 3 3	3 3 3	1 3 2	3 3 4	1 1 1
BATTALION CHIEF	63	64	47	H H H	2 3 2	3 1 3	2 2 3	4 3 3	1 1 1
CAPTAIN	25	30	11	H H H	1 2 3	3 1 3	1 2 2	3 4 3	1 1 1
PERSONNEL MATTERS	84	87	88	H H H	2 2 2	1 1 1	2 2 2	3 4 3	1 1 1
CHIEF	100	100	94	H H H	2 3 2	1 1 1	2 2 2	4 4 4	1 1 1
ASSISTANT CHIEF	81	94	95	H H H	2 1 1	1 1 1	2 2 2	4 3 3	1 1 1
BATTALION CHIEF	89	93	93	H H H	1 2 2	1 1 1	2 2 2	3 4 3	1 1 1
CAPTAIN	81	84	87	H H H	2 2 2	1 1 3	2 2 2	3 3 3	1 1 1

* RELATIONS BETWEEN INTRADEPARTMENTAL BUREAUS AND DIVISIONS Involves developing and maintaining cooperation with police agencies, building and electrical inspection officials, health agencies, legislative and administrative staff agencies, water department, and all others within the structure of the political subdivision. All of the chiefs exercise their responsibility in maintaining intradepartmental relationships. Most of the departments, regardless of size, operate at a high rate of frequency under critical time conditions in order to arrive at compatible decisions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	1	1	6	0	0	0	1	0	0	0
BASIC-GENERAL	19	2	2	3	31	2	4	1	34	5	22	0
IN-DEPTH	9	4	6	7	10	3	3	2	1	1	1	0

Statewide Advisory Committee recommendations

CHIEF 92 3 3CME : ASST CHIEF 73 2 3CME : BATTN CHIEF 44 2 2C3C : CAP 41 2 2C3C

* RELATIONS BETWEEN INTERDEPARTMENTAL DEPARTMENTS AND JURISDICTIONS Involves developing and maintaining cooperation with other agencies, such as American Insurance Association, National Fire Protection Association, American Red Cross, medical associations, International, national, area and local fire chiefs' associations, and others not generally considered to be within the structure of the political subdivision. Ninety percent of the chiefs are involved in this task while only 16 percent of the captains are actively concerned.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	1	0	1	5	0	0	0	0	0	0	0
BASIC-GENERAL	12	3	2	2	19	2	4	1	14	6	1	0
IN-DEPTH	12	7	5	7	11	4	4	4	1	0	0	0

Statewide Advisory Committee recommendations

CHIEF 90 3 3CME : ASST CHIEF 63 3 3CME : BATTN CHIEF 52 2 2CME : CAP 16 2 2C3C

* PERSONNEL MATTERS Includes interpreting and applying codes, ordinances and rules governing disciplinary actions and grievance procedures, and developing and applying effective interview and counseling procedures. All ranks are actively involved in this category at a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	0	1	3	11	3	4	0	7	0	0	0
BASIC-GENERAL	38	12	5	17	34	13	7	10	59	11	22	7
IN-DEPTH	25	17	14	15	35	28	15	19	18	8	6	7

Statewide Advisory Committee recommendations

CHIEF 98 2 3D3D : ASST CHIEF 92 1 3D3D : BATTN CHIEF 93 2 2D3D : CAP 86 2 2D3D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
SAFETY PROGRAMS	63	69	54	H H H	2 1 2	1 1 1	3 2 3	3 3 3	1	1	1
CHIEF	87	89	81	H H H	3 3 2	1 1 1	3 2 3	3 3 4	1	1	1
ASSISTANT CHIEF	69	89	60	H H H	3 1 1	3 1 1	3 2 3	3 3 3	1	1	1
BATTALION CHIEF	93	80	70	H H H	1 3 2	3 1 3	3 3 3	3 3 3	1	1	1
CAPTAIN	53	64	51	H H H	2 1 2	1 1 3	3 3 2	3 3 3	1	1	1
AIA GRADING SCHEDULE	30	41	15	L H H	3 3 1	1 3 1	3 3 3	4 4 4	1	1	1
CHIEF	92	96	94	H H H	3 3 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	56	72	36	L H H	2 3 2	3 3 3	3 3 3	4 3 4	1	1	1
BATTALION CHIEF	44	72	23	L H H	3 1 1	3 3 3	3 3 3	4 4 3	1	1	1
CAPTAIN	10	30	13	L H H	2 2 1	3 3 1	3 3 1	3 3 4	1	1	1
RESEARCH IN FIRE SCIENCE TECHNOLOGY	28	44	43	H H H	2 2 2	3 3 3	3 3 3	4 3 4	1	1	1
CHIEF	67	68	69	H H H	2 3 3	1 1 1	3 3 3	4 4 3	1	1	1
ASSISTANT CHIEF	56	58	35	H H H	2 2 3	3 3 3	3 3 3	3 3 4	1	1	1
BATTALION CHIEF	63	48	4	H H H	2 2 2	3 3 1	3 3 3	4 4 4	1	1	1
CAPTAIN	11	41	47	H H H	2 2 2	3 3 3	3 3 3	4 3 4	12	1	1

- SAFETY PROGRAMS Involves developing, planning, initiating, and evaluating departmental and unit safety programs. All ranks are actively involved in this category.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	10	0	0	1	5	0	0	0	2	0	0	0
BASIC-GENERAL	35	8	1	16	33	9	2	15	36	9	0	0
IN-DEPTH	11	2	2	6	25	15	2	15	15	2	1	6

Statewide Advisory Committee recommendations

CHIEF 87 3 3DRE : ASST CHIEF 69 1 3DME : BATTN CHIEF 74 2 3DME : CAP 53 2 2D3D

- A.I.A. GRADING SCHEDULE Involves analyzing, interpreting and applying the American Insurance Association's Standard Schedule For Grading Cities and Towns of the United States With Reference To Their Fire Defenses and Physical Condition. Chiefs of department usually deal with the entire grading schedule, while subordinate officers usually deal with those portions of the schedule which relate to their bureaus, divisions, or assignments. The small departments are not frequently involved with the A.I.A., but when they are, the chief is the main contact. There is a low rate of involvement in this category for officers of the lower ranks.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	9	7	4	3	5	0	0	0
BASIC-GENERAL	9	5	2	4	19	9	5	5	7	5	0	0
IN-DEPTH	11	6	3	6	9	8	5	6	3	0	0	1

Statewide Advisory Committee recommendations

CHIEF 93 3 3DME : ASST CHIEF 50 2 3D3D : BATTN CHIEF 32 1 3DME : CAP 15 2 2D2D

- RESEARCH IN FIRE SCIENCE TECHNOLOGY Involves carefully and diligently searching for improved systems, methods, and techniques for providing more effective public fire protection. Approximately two-thirds of the chiefs in all size departments are involved in the administration and research aspects of fire science. This is primarily the chief's decision-making responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	1	11	7	4	6	3	3	0	0
BASIC-GENERAL	8	4	0	2	18	15	6	9	1	0	0	0
IN-DEPTH	9	6	2	7	12	11	7	9	38	16	22	0

Statewide Advisory Committee recommendations

CHIEF 68 3 3DME : ASST CHIEF 46 2 3DME : BATTN CHIEF 17 2 2D3D : CAP 41 2 2D2D

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	PEN			FRG			S-K			D-P			H-A			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
TIME AND MOTION UTILIZATION	48	45	9	H	H	H	2	2	2	1	1	1	3	3	3	3	3	3	1	1	1
CHIEF	59	57	44	H	H	H	1	2	3	1	1	1	3	3	3	4	3	4	1	1	1
ASSISTANT CHIEF	47	56	28	H	H	H	2	3	1	1	1	3	2	3	2	3	3	3	1	1	1
BATTALION CHIEF	81	42	17	H	H	H	1	3	2	1	1	3	2	3	3	3	4	4	1	1	12
CAPTAIN	41	44	6	H	H	H	2	2	3	1	1	1	2	3	3	3	4	3	1	1	1
MANPOWER UTILIZATION	78	82	85	H	H	H	2	3	2	1	1	1	2	3	3	3	4	3	1	1	1
CHIEF	100	96	88	H	H	H	1	3	3	1	1	1	3	3	3	3	4	4	1	1	1
ASSISTANT CHIEF	81	89	98	H	H	H	2	3	2	3	1	1	2	3	3	3	4	3	1	1	1
BATTALION CHIEF	100	93	72	H	H	H	1	1	3	1	1	1	2	3	3	3	4	3	1	1	1
CAPTAIN	69	78	86	H	H	H	2	2	2	1	1	1	2	3	2	3	4	3	1	1	1
SELECTION OF PERSONNEL	42	23	10	L	L	L	2	2	2	1	1	1	2	2	2	3	4	4	1	1	1
CHIEF	97	96	88	L	L	L	2	1	1	1	1	1	2	2	3	4	4	4	1	1	1
ASSISTANT CHIEF	72	69	35	L	M	H	2	2	2	3	3	1	2	2	2	3	4	4	1	1	1
BATTALION CHIEF	74	65	11	L	L	L	1	2	2	1	1	1	2	2	2	3	4	3	1	1	1
CAPTAIN	20	7	8	L	L	H	2	2	2	3	3	2	2	2	3	3	3	4	1	1	1

* TIME AND MOTION UTILIZATION Involves analyzing methods of performing work and developing, initiating, and evaluating improved methods. This category apparently is being handled by the chief officers in the small and medium size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	0	0	0	11	1	0	1	0	0	0	0
BASIC-GENERAL	15	1	3	5	15	2	3	1	5	3	0	0
IN-DEPTH	17	12	4	7	15	12	12	10	3	1	0	0

Statewide Advisory Committee recommendations

CHIEF 54 2 3DME : ASST CHIEF 40 2 3DME : BATTN CHIEF 28 2 2D3D : CAP 16 2 1D2D

* MANPOWER UTILIZATION Fire department officers should understand the accepted methods that are available to assist them in keeping the fire department at its top operating efficiency and economy for the number of companies, work to be performed, and hours worked by each man. All ranks in all size departments are highly involved in this category.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	13	0	1	1	10	0	0	0	7	0	0	0
BASIC-GENERAL	28	14	4	15	31	8	1	6	37	7	0	0
IN-DEPTH	28	16	7	16	38	23	15	17	40	11	26	9

Statewide Advisory Committee recommendations

CHIEF 95 3 3DME : ASST CHIEF 91 2 2DME : BATTN CHIEF 79 1 3DME : CAP 83 2 2D3D

* SELECTION OF PERSONNEL Involves hiring, promoting, and assigning personnel as provided by codes, ordinances, and rules, and in accordance with sound and effective administrative principles. The chief, assistant chief and battalion chief are charged with the responsibility for the selection of personnel. The decision mainly rests with the chief and battalion chief in all size departments, as well as with the assistant chief in large size departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	CU	CU	ST
ORIENTATION	3	1	1	0	3	0	0	0	0	0	0	0
BASIC-GENERAL	16	7	2	6	7	1	1	1	2	0	0	0
IN-DEPTH	8	7	7	8	8	7	7	5	7	5	1	0

Statewide Advisory Committee recommendations

CHIEF 92 1 3DME : ASST CHIEF 44 2 3D3D : BATTN CHIEF 26 2 3DME : CAP 9 2 2DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
EVALUATICN OF PERSCNNEL	83	89	91	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	95	96	75	H M H	2 2 2	1 1 1	2 2 2	3 4 4	1 1 1
ASSISTANT CHIEF	69	89	98	H H H	2 2 2	3 1 1	2 2 2	4 3 3	1 1 1
BATTALION CHIEF	100	98	74	M H H	2 2 2	1 1 1	2 2 2	4 3 3	1 1 1
CAPTAIN	80	87	93	L H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
ANALYSIS OF RECORDS AND DATA	50	56	30	H H H	2 2 2	1 1 1	3 3 3	3 4 3	1 1 1
CHIEF	92	100	81	M H H	2 2 2	1 1 1	3 3 3	3 4 4	1 1 1
ASSISTANT CHIEF	78	67	58	H H H	2 2 2	3 1 1	3 3 3	3 4 4	1 1 1
BATTALION CHIEF	81	72	50	H H M	2 2 2	3 1 1	3 3 3	3 4 1	1 1 1
CAPTAIN	32	50	25	H H H	2 2 2	1 1 1	3 3 4	3 4 4	1 1 1
PREFIRE PLANNING	94	93	93	H H H	2 2 2	1 1 1	3 3 3	4 4 4	1 1 1
CHIEF	95	86	63	H M H	3 3 3	1 1 1	3 3 3	4 4 4	1 1 1
ASSISTANT CHIEF	81	89	56	H H H	2 2 3	1 1 1	3 3 3	4 4 4	1 1 1
BATTALION CHIEF	93	92	99	H H H	2 3 2	1 1 1	3 3 3	4 4 4	1 1 1
CAPTAIN	96	93	94	H H H	2 2 2	1 1 1	3 3 3	4 4 4	1 1 1

* EVALUATION OF PERSONNEL Involves observing subordinates; analyzing their job performance, personal characteristics, and potentials; recording observations, and discussing evaluations with the subordinates concerned. All ranks and all size departments are highly involved.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	1	2	10	0	0	0	3	0	0	0
BASIC-GENERAL	33	8	3	11	36	10	2	6	64	8	22	0
IN-DEPTH	28	14	9	15	29	24	15	17	21	12	5	0

Statewide Advisory Committee

CHIEF 90 2 3DME : ASST CHIEF 88 2 3DME : BATTN CHIEF 81 2 3DME : CAP 90 2 3D3D

* ANALYSIS OF RECORDS AND DATA Involves interpreting data, relating interpretations to current effectiveness, and utilizing data as a foundation for future planning. Decisions concerning the analysis of records and data are usually made by all of the administrative ranks with a high rate of frequency.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	1	1	16	0	1	0	2	0	0	0
BASIC-GENERAL	21	7	2	6	15	4	2	1	17	0	0	0
IN-DEPTH	12	9	5	8	20	15	12	8	9	1	1	5

Statewide Advisory Committee recommendations

CHIEF 92 2 3DME : ASST CHIEF 65 2 3DME : BATTN CHIEF 57 2 3DRE : CAP 29 2 2DME

* PREFIRE PLANNING Involves gathering facts regarding target hazards, interpreting facts, disseminating information, and developing fire combat plans. Captains usually perform a majority of fact-finding activities and chief officers usually participate in developing fire combat plans. All ranks in departments of all sizes are highly involved.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	12	5	0	4	13	2	0	0	3	1	0	0
BASIC-GENERAL	29	14	3	15	22	12	3	4	13	4	0	0
IN-DEPTH	49	24	6	32	53	36	11	23	75	29	26	6

Statewide Advisory Committee recommendations

CHIEF 83 3 3DRE : ASST CHIEF 71 2 3DME : BATTN CHIEF 97 2 3DME : CAP 94 2 2D3D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
CO-OPERATION WITH CTHER FIRE FIGHTING AGENCIES	74	57	47	H H H	2 2 2	1 1 1	3 3 3	3 3 3	1 1 1
CHIEF	97	1C0	94	H H H	2 3 3	1 1 1	3 3 3	3 3 4	1 1 1
ASSISTANT CHIEF	94	92	70	H H H	2 1 3	3 1 3	3 3 1	3 3 3	1 1 1
BATTALION CHIEF	81	98	74	H H H	2 2 1	3 1 1	3 1 3	3 3 3	1 1 1
CAPTAIN	64	44	42	H H L	2 2 2	1 1 2	3 1 2	3 3 3	1 1 1
USE OF AVAILABLE RESOURCES AT A FIRE	83	86	87	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1 1 1
CHIEF	100	100	75	H H H	2 2 3	2 2 2	3 3 3	4 4 4	1 1 1
ASSISTANT CHIEF	94	94	90	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1 1 1
BATTALION CHIEF	93	98	74	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1 1 1
CAPTAIN	77	83	89	H H H	2 2 2	2 2 2	3 3 3	3 4 4	1 1 1
COORDINATION OF SPECTIAL LCCAL ORDINANCES IN FIRE PREVENTION PROGRAM	27	31	13	H H H	2 1 2	1 1 1	3 3 3	4 4 4	1 1 1
CHIEF	79	86	69	H H H	2 3 3	1 1 1	3 3 3	4 4 4	1 1 1
ASSISTANT CHIEF	56	50	26	H H H	3 2 1	3 1 1	3 3 3	3 4 3	1 1 1
BATTALION CHIEF	26	42	23	H H H	1 1 2	1 1 3	3 3 3	4 4 3	1 1 1
CAPTAIN	11	24	11	H H H	2 1 2	1 1 1	2 2 1	4 3 3	1 1 1

* COOPERATION WITH OTHER FIRE FIGHTING AGENCIES Under the provisions set down in mutual assistance agreements, this would involve an understanding of the agreements and the ability to perform any required operations under the direction of diverse administrative personnel as described in the agreements. All of the ranks are extensively involved in cooperating with other fire fighting agencies. The supervisorial level involves the identification and evaluation of desirable practices in administration.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	15	0	0	1	7	0	0	1	2	0	0	0
BASIC-GENERAL	33	11	1	11	34	4	4	6	37	7	22	0
IN-DEPTH	17	7	3	9	7	3	4	1	5	0	0	3

Statewide Advisory Committee recommendations

CHIEF 98 3 3DME : ASST CHIEF 82 2 3DRE : BATTN CHIEF 78 2 2DME : CAP 45 2 2DME

* USE OF AVAILABLE RESOURCES AT A FIRE Requires the knowledge of local conditions and facilities and the ability to correlate and utilize all available pertinent factors necessary for the control of any emergency situation. Personnel of all ranks and departments are extensively involved in this task and at a high rate of frequency. Critical decisions are required and technical competence to be able to plan, organize, and control are of the utmost importance.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	0	10	0	0	3	1	0	0	0
BASIC-GENERAL	35	14	2	21	18	3	3	6	14	1	0	0
IN-DEPTH	40	21	9	25	57	43	11	31	71	35	27	4

Statewide Advisory Committee recommendations

CHIEF 93 2 3DRE : ASST CHIEF 92 2 3DME : BATTN CHIEF 80 2 3DME : CAP 87 2 2D3D

* COORDINATION OF SPECIAL LOCAL ORDINANCES IN FIRE PREVENTION PROGRAM Involves the understanding of all local ordinances as well as state and federal codes, so as to coordinate their application in the best interests of public safety. The officers of higher rank in all departments are involved in this category; lower rank officers are seldom involved.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	2	0	0	0	1	1	0	0
BASIC-GENERAL	8	3	2	2	13	7	2	3	9	0	0	1
IN-DEPTH	14	11	6	10	10	7	2	4	3	1	0	0

Statewide Advisory Committee recommendations

CHIEF 79 3 3DME : ASST CHIEF 39 2 3DME : BATTN CHIEF 26 1 3DME : CAP 13 2 2DME

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ			S-K			D-M			H-A			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
RESCUE TACTICS TO BE USED AT A FIRE	92	94	96	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CHIEF	87	71	63	H	H	H	2	3	3	2	2	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	81	78	78	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
BATTALION CHIEF	100	96	99	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CAPTAIN	93	96	97	H	H	H	2	2	2	2	2	2	3	3	3	3	4	4	1	1	1
CASUALTY HANDLING	78	83	68	H	H	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
CHIEF	77	61	38	H	H	M	2	2	3	2	2	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	84	75	56	H	H	H	2	2	1	2	2	2	3	3	3	4	4	4	1	1	1
BATTALION CHIEF	96	81	91	H	H	H	2	1	2	2	2	2	3	3	3	4	4	4	1	1	1
CAPTAIN	75	86	67	H	M	H	2	2	2	2	2	2	3	3	3	4	4	4	1	1	1
LOCATING EVIDENCE OF INCENDIARISM	74	79	93	H	H	H	2	2	2	1	1	1	3	3	3	4	4	4	1	1	1
CHIEF	87	57	50	H	M	H	2	2	3	1	1	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	75	83	57	M	H	H	2	2	2	1	1	1	3	3	3	4	4	3	14	1	1
BATTALION CHIEF	100	92	100	H	H	H	2	2	1	3	1	1	3	3	3	4	4	4	1	1	1
CAPTAIN	67	78	94	H	H	H	2	2	2	1	1	3	3	3	3	3	4	4	1	1	1

* RESCUE TACTICS TO BE USED AT A FIRE Requires the ability to estimate the scope of the rescue problem, the procurement and utilization of heavy rescue equipment, the administration of emergency care for the injured, and the coordination of all rescue activities at the scene of a fire or other emergency. Personnel of all ranks and departments are extensively involved in this task and at a high rate of frequency. A critical time limit is imposed upon personnel in all ranks, with the exception of chiefs in the large departments who indicate a reasonable length of time in which to make decisions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	2	0	3	4	0	0	1	0	0	0	0
BASIC-GENERAL	35	16	2	21	31	10	5	8	15	4	0	3
IN-DEPTH	49	30	8	31	56	38	13	36	80	15	26	2

Statewide Advisory Committee recommendations

CHIEF 77 3 3DRE : ASST CHIEF 79 2 3DRE : BATTN CHIEF 99 2 3DME : CAP 96 2 3D3D

* CASUALTY HANDLING Involves the knowledge and ability necessary to determine the extent of injury, organize and arrange for first aid treatment and transportation, provide for protection from the elements, and coordinate activities with all assisting agencies. The majority of personnel in all ranks and departments are directly involved with casualty handling, with the exception of chiefs in large departments (38 percent - moderate frequency).

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	3	1	0	0	1	0	0	0	0
BASIC-GENERAL	24	12	2	13	20	5	5	5	14	1	0	3
IN-DEPTH	42	18	3	25	55	30	4	24	54	11	4	5

Statewide Advisory Committee recommendations

CHIEF 60 2 3DRE : ASST CHIEF 68 2 3DRE : BATTN CHIEF 90 2 3DME : CAP 70 2 2D3D

* LOCATING EVIDENCE OF INCENDIARISM Calls for the knowledge, training and ability required to investigate and determine the point of origin of fires; the effect of accelerants and other factors on the fire behaviour characteristics of different flammable materials; the modus operandi, motives, and typical behavior patterns of fire setters; the flash points, ignition temperatures, and burning characteristics of flammables. The battalion chiefs in all size departments are almost 100 percent involved in this type of investigation. They operate in compliance with predetermined plans and procedures.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	1	0	4	20	16	0	1	3	1	0	1
BASIC-GENERAL	28	17	3	15	29	23	5	16	43	2	22	0
IN-DEPTH	34	21	8	27	29	26	13	19	46	14	4	4

Statewide Advisory Committee recommendations

CHIEF 66 2 3DRE : ASST CHIEF 68 2 3DME : BATTN CHIEF 99 2 3DME : CAP 88 2 3DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
LOCATING AND PROTECTING EVIDENCE AT A FIRE	85	92	94	H H H	2 2 2	1 1 1	3 3 3	4 4 4	1	1	1
CHIEF	74	57	50	H H H	2 1 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	91	81	58	M H H	2 2 1	1 1 1	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	100	95	100	H H H	2 2 2	3 1 1	3 3 3	4 4 4	1	1	1
CAPTAIN	84	94	95	H H H	2 2 2	3 1 3	3 3 3	3 4 3	1	1	1
FIRE PROTECTION PROBLEMS INVOLVING HAZARDOUS MATERIALS, I.E., METALS, PLASTICS	71	82	82	H H H	2 2 2	1 1 1	3 3 3	4 4 4	1	1	1
CHIEF	85	75	69	H M H	2 3 2	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	78	67	74	H H H	2 2 2	1 3 1	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	74	91	97	H H H	2 2 2	3 1 1	3 3 3	4 4 4	1	1	1
CAPTAIN	66	82	81	H H H	2 2 2	2 2 2	3 3 3	3 4 4	1	1	1
DETERMINING TYPE OF EXTINGUISHING AGENT TO BE USED	88	87	95	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CHIEF	74	57	56	H H H	2 1 3	2 2 2	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	91	72	85	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	81	79	90	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CAPTAIN	91	92	96	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1

* LOCATING AND PROTECTING EVIDENCE AT A FIRE Requires the knowledge and ability to prevent destruction, investigate and identify articles of evidence, and preserve same in such a manner that they will be admissible as evidence in a court of law. A high percentage of men in all ranks and departments carry out this function. They all indicate that a reasonable time limit is available to estimate the situation and make a decision.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	1	0	4	14	9	0	1	0	0	0	0
BASIC-GENERAL	35	14	2	18	36	18	3	13	46	1	22	8
IN-DEPTH	37	22	9	27	39	31	12	26	47	14	6	4

Statewide Advisory Committee recommendations

CHIEF 61 2 3DME : ASST CHIEF 72 2 3DME : BATTN CHIEF 99 2 3DME : CAP 93 2 3DME

* FIRE PROTECTION PROBLEMS INVOLVING HAZARDOUS MATERIALS, I.E., METALS, PLASTICS Requires a thorough knowledge of hazardous materials, such as their burning, explosive, smoke producing and toxicity characteristics; standards and codes covering their handling and storing; and the effect of the various extinguishing agents and systems in suppressing fires involving these materials. A high percentage of men in all ranks in all departments perform this function. They all indicate that a reasonable time limit is available to estimate the situation and make a decision, with the exception of the captains who indicate that a critical time limit exists.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	5	0	2	17	14	2	0	1	0	0	0
BASIC-GENERAL	25	18	1	13	27	19	7	12	27	2	22	1
IN-DEPTH	33	21	10	21	37	36	10	20	52	37	4	7

Statewide Advisory Committee recommendations

CHIEF 77 2 3DME : ASST CHIEF 73 2 3DME : BATTN CHIEF 93 2 3DME : CAP 79 2 3D3D

* DETERMINING THE TYPE OF EXTINGUISHING AGENT TO BE USED Involves a knowledge of the chemical and physical characteristics of burning; how the various extinguishing agents accomplish their purpose; and the quantity of a specific extinguishing agent required to accomplish a given objective. The majority of men in all ranks in all departments frequently determine the type of extinguishing agent to be used and make the decision under critical time conditions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	0	2	1	0	0	0	0	0	0	0
BASIC-GENERAL	27	16	0	19	17	2	1	4	15	6	0	1
IN-DEPTH	50	34	12	34	67	57	15	40	76	39	25	8

Statewide Advisory Committee recommendations

CHIEF 62 2 3DME : ASST CHIEF 83 2 3DME : BATTN CHIEF 87 2 3DME : CAP 95 2 3DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	PEN			FRQ	S-K	D-M	M-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
REQUIRED VENTILATICN AT A FIRE	95	91	92	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CHIEF	87	68	69	H H H	2 3 3	2 2 2	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	84	86	89	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	96	87	99	H H H	2 1 2	2 2 2	3 3 3	4 4 4	1	1	1
CAPTAIN	98	93	92	H H H	2 2 2	2 2 2	3 3 3	3 4 4	1	1	1
SIZE UP FIRE AND DETERMINE PLAN CF OPERATION	94	90	99	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CHIEF	95	79	81	H H H	2 3 2	2 2 2	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	84	94	93	H H H	2 2 2	2 2 2	3 3 3	4 4 4	14	1	1
BATTALION CHIEF	100	88	99	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CAPTAIN	94	90	99	H H H	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
WATER FOR COMMUNITY FIRE PROTECTION	42	30	30	H H H	2 1 2	3 1 1	3 3 3	4 4 4	1	1	1
CHIEF	100	93	94	H H H	2 3 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	63	53	40	H H H	2 1 3	3 3 3	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	56	55	50	H H H	2 1 1	3 1 3	3 3 3	4 4 3	1	1	1
CAPTAIN	25	20	27	H H H	2 2 2	3 1 3	3 3 4	4 3 4	1	1	1

- REQUIRED VENTILATION AT A FIRE Involves the application of principles of fire behavior in such a manner so as to control heat, increase visibility, prevent fire extension, effect rescue and prevent loss. Over 90 percent of the personnel in all ranks perform this task at a high frequency and under critical time conditions when estimating the situation and making sound decisions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	3	0	0	1	6	2	0	1	0	0	0	0
BASIC-GENERAL	37	21	2	28	30	13	6	10	13	3	0	3
IN-DEPTH	48	29	8	35	54	43	11	41	78	29	25	8

Statewide Advisory Committee recommendations

CHIEF 72 3 YEARS : ASST CHIEF 87 2 YEARS : BATTN CHIEF 97 2 YEARS : CAP 93 2 YEARS

- SIZE UP FIRE AND DETERMINE PLAN OF OPERATION Involves the knowledge and experience necessary to estimate an emergency situation, in view of the requirements needed to conduct the total operation through to a successful conclusion. Becomes the duty of the first arriving officer and/or of each successive superior officer arriving on the scene and continues throughout the emergency and until operations are completed. Nearly all personnel in all departments are required to make "fire size up" and at a high frequency. This is performed under critical limits for estimating the situation and making sound decisions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	6	5	0	1	1	2	0	0
BASIC-GENERAL	29	16	2	20	25	13	4	7	15	6	0	8
IN-DEPTH	56	46	9	38	58	49	18	42	80	35	26	9

Statewide Advisory Committee recommendations

CHIEF 85 2 YEARS : ASST CHIEF 91 2 YEARS : BATTN CHIEF 98 2 YEARS : CAP 97 2 YEARS

- WATER FOR COMMUNITY FIRE PROTECTION Requires the knowledge and understanding needed to plan water systems that will meet the standards and provide the required fire flow recommended in the Standard Grading Schedule of the American Insurance Association, in order to satisfy current local needs as well as projected future needs. Also includes the mapping of auxiliary water supplies, such as lakes, rivers, swimming pools, irrigation supplies, etc., and making provision for their use to supplement normal systems in the event of their failure or inadequacy. The greatest responsibility for this category rests with the chiefs in all departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	0	0	0	5	0	0	0	3	0	0	0
BASIC-GENERAL	9	7	1	3	15	8	2	2	5	0	0	0
IN-DEPTH	18	7	6	9	10	7	4	4	23	0	22	0

Statewide Advisory Committee recommendations

CHIEF 96 3 YEARS : ASST CHIEF 49 2 YEARS : BATTN CHIEF 51 1 YEARS : CAP 26 2 YEARS

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	PEN			FRQ	S-K	D-M	M-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
EMERGENCY RESCUE METHODS	90	80	89	M M M	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CHIEF	79	64	56	M M M	2 3 3	2 2 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	78	81	72	M M M	2 2 2	2 2 2	3 3 3	4 4 3	1	1	1
BATTALION CHIEF	100	92	99	M M M	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
CAPTAIN	93	79	90	M M M	2 2 2	2 2 2	3 3 3	4 4 4	1	1	1
ESTABLISH BASIC AIMS OF TRAINING	57	51	20	M M M	3 3 3	1 1 1	3 3 3	4 4 4	1	1	1
CHIEF	92	89	75	M M M	3 3 3	1 1 1	3 3 3	4 4 4	4	1	1
ASSISTANT CHIEF	78	61	46	M M M	3 3 3	1 1 1	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	89	69	25	M M M	3 3 1	3 3 1	3 3 2	4 4 3	1	1	1
CAPTAIN	42	45	18	M M M	2 2 2	3 1 3	3 3 2	4 3 4	1	1	1
INSTILLING DISCIPLINE THROUGH PROPER TRAINING	83	86	90	M M M	1 1 2	1 1 1	2 2 2	3 4 4	1	1	1
CHIEF	87	89	69	M M M	1 3 3	1 1 1	2 2 2	3 4 4	1	1	1
ASSISTANT CHIEF	81	81	77	M M M	1 1 3	1 1 1	2 2 2	4 4 4	1	1	1
BATTALION CHIEF	100	87	73	M M M	1 1 1	1 1 1	2 2 2	4 4 3	1	1	1
CAPTAIN	80	86	93	M M M	1 2 2	1 1 1	2 2 2	3 4 4	1	1	1

* EMERGENCY RESCUE METHODS Involves the knowledge necessary to provide the required manpower and proper equipment and to select the best procedure to successfully effect rescues under varying conditions. All personnel, regardless of rank, are required to exercise proficiency in the performance of this task. More of the battalion chiefs and the captains are involved than are men in other ranks. A critical time limit for all ranks is essential, with the exception of chiefs in large departments, who operate under reasonable time limits.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	2	0	3	4	1	0	0	3	0	0	0
BASIC-GENERAL	27	15	2	15	23	11	3	6	12	3	0	3
IN-DEPTH	49	30	7	39	52	47	11	29	73	10	23	8

Statewide Advisory Committee recommendations

CHIEF 68 3 3DRE : ASST CHIEF 76 2 3DRE : BATTN CHIEF 98 2 3DME : CAP 89 2 3D3D

* ESTABLISH BASIC AIMS OF TRAINING Involves the ability to visualize and determine job requirements at all levels and to establish training goals in order to prepare people who are fully capable of functioning at the various appropriate levels under all conditions. Chiefs are most directly involved in formulating policies and objectives for training programs. The ability to develop objectives is gained within the department, with the exception of chiefs in small departments, who received training through the State Fire Training Office.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	2	4	1	0	2	2	0	0	1
BASIC-GENERAL	22	8	2	11	24	8	2	5	8	1	0	1
IN-DEPTH	29	18	6	23	23	16	9	17	10	1	1	7

Statewide Advisory Committee recommendations

CHIEF 86 3 3DME : ASST CHIEF 58 3 3DME : BATTN CHIEF 39 3 3DME : CAP 25 2 3DME

* INSTILL DISCIPLINE THROUGH PROPER TRAINING Requires an understanding of the necessity for, and exercise of constant appraisal, and the development of proper attitudes through training, in order to improve morale, interest, loyalty, safety practices, etc. All of the supervisory ranks are charged with the responsibility of instilling discipline and this is accomplished with emphasis on the ability to work with and influence people.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	6	0	0	3	4	1	0	2	3	0	0	2
BASIC-GENERAL	38	14	1	25	24	8	2	5	14	3	0	0
IN-DEPTH	29	18	14	15	23	16	9	17	70	14	26	11

Statewide Advisory Committee recommendations

CHIEF 83 3 3DRE : ASST CHIEF 79 1 3DME : BATTN CHIEF 79 1 3DME : CAP 90 2 3D3D

TABLE 52. SUPERVISCRIAL. ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
DEVISING OF TESTS TC DETER-MINE A UNIT S PROFICIENCY OR PROGRESS	42	53	50	M M M	2 2 3	1 1 1	3 3 3	3 4 4	1	1	1
CHIEF	67	54	44	L L H	2 2 3	1 1 1	3 3 3	3 3 4	1	1	1
ASSISTANT CHIEF	53	53	19	M M M	3 1 3	3 1 1	3 3 3	4 4 4	1	1	1
BATTALION CHIEF	89	55	42	M M M	2 3 1	3 1 1	3 3 2	4 4 4	1	1	1
CAPTAIN	28	52	53	M M H	2 2 2	1 1 1	3 3 3	3 3 4	1	1	1
ESTABLISHMENT OF PCLICIES AND CRITERIA AS A GUICE FCR SUBORDINATES	45	49	48	H H H	3 3 3	1 1 1	3 3 2	3 4 4	1	1	1
CHIEF	100	96	100	M H H	3 3 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	72	83	51	H H H	1 3 3	3 1 3	3 3 2	3 3 4	1	1	1
BATTALION CHIEF	89	81	59	H H H	2 3 2	3 1 1	2 3 2	3 4 3	1	1	1
CAPTAIN	23	38	46	H H H	3 2 2	3 1 1	2 3 2	3 4 3	1	1	1
REVIEWING SPAN OF CONTRCL - CAN SUPERVISOR EFFECTIVELY CONTRCL CONSIDERING TIME AND SPACE FACTORS	34	27	15	H H H	2 2 2	3 1 1	3 3 3	3 3 4	1	1	1
CHIEF	85	82	75	H H H	2 3 3	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	47	61	42	H M H	3 2 2	3 3 3	3 3 3	3 3 3	1	1	1
BATTALION CHIEF	70	44	70	H H H	1 2 2	3 3 1	3 3 3	3 3 3	1	1	1
CAPTAIN	16	18	7	H H H	3 2 1	3 3 1	3 3 3	3 4 4	1	1	124

* DEVISING OF TESTS TO DETERMINE A UNIT'S PROFICIENCY OR PROGRESS Refers to the ability and knowledge necessary to construct testing material that will, when properly administered and interpreted, evaluate proficiency in given areas of activity and/or show development in the progress of personnel toward established goals. The results indicate that the battalion chiefs in the small and medium size departments and the captains in the large departments are most often involved in this category. These probably are the ranks most typically held by the training officer.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	1	2	5	0	0	1	2	0	0	0
BASIC-GENERAL	21	3	1	10	23	8	2	4	3	0	0	0
IN-DEPTH	14	10	4	10	20	14	8	10	45	1	22	1

Statewide Advisory Committee recommendations

CHIEF 57 2 3DME : ASST CHIEF 31 3 3D3D : BATTN CHIEF 50 2 3DME : CAP 50 2 3D3D

* ESTABLISHMENT OF POLICIES AND CRITERIA AS A GUIDE FOR SUBORDINATES Involves the knowledge and experience required to effectively develop and promulgate standards of performance and behavior that, when adhered to, will direct the actions of personnel in the best interests of the organization and the service as a whole. The chief officers in all departments are fulfilling this responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	0	1	1	8	1	0	2	0	0	0	0
BASIC-GENERAL	20	6	2	6	17	6	1	1	41	7	22	0
IN-DEPTH	12	6	6	10	19	16	14	13	4	3	1	3

Statewide Advisory Committee recommendations

CHIEF 99 3 3DME : ASST CHIEF 64 3 3D3D : BATTN CHIEF 65 2 3DME : CAP 42 2 2DME

* REVIEWING SPAN OF CONTROL - CAN SUPERVISOR EFFECTIVELY CONTROL CONSIDERING TIME AND SPACE FACTORS? Requires that knowledge of supervision that would enable a supervisor to evaluate the effectiveness of supervision at the various administrative levels and to interpret such evaluation with a view to correcting existing deficiencies. The chief officers in all departments are fulfilling this responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	1	0	2	0	0	0	0	0	0	0
BASIC-GENERAL	17	7	3	8	10	3	2	2	5	3	1	0
IN-DEPTH	10	6	6	6	9	9	9	4	9	1	1	5

Statewide Advisory Committee recommendations

CHIEF 80 3 3DME : ASST CHIEF 49 2 3DME : BATTN CHIEF 67 2 3DME : CAP 10 2 2DME

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
MINIMIZING ADMINISTRATIVE BURDENS AT LOWER ECHELONS	34	33	12	H H H	2 2 3	1 1 1	3 3 3	3 3 4	1 1 1
CHIEF	79	64	63	H H H	3 2 3	1 1 1	3 3 3	4 3 4	1 1 1
ASSISTANT CHIEF	53	53	38	H H H	3 2 2	3 3 1	3 3 3	3 3 4	1 1 1
BATTALION CHIEF	63	51	21	H H H	2 2 2	1 1 1	2 3 3	3 4 4	1 1 1
CAPTAIN	18	26	9	H H H	1 2 3	1 1 1	2 2 3	3 4 4	1 1 1
DELEGATION OF AUTHORITY TO SUBORDINATES COMMENSURATE WITH ASSIGNED RESPONSIBILITIES	72	83	91	H H H	1 1 2	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	100	96	94	H H H	1 3 3	1 1 1	2 2 3	4 4 4	1 1 1
ASSISTANT CHIEF	75	97	88	H H H	1 1 1	1 1 1	2 2 2	3 3 3	1 1 1
BATTALION CHIEF	96	86	67	H H H	1 1 2	1 1 1	2 2 2	3 4 3	1 1 1
CAPTAIN	62	80	93	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
PROVIDING NECESSARY MEANS TO SUBORDINATES TO PERMIT ACCOMPLISHMENT OF ASSIGNED MISSION	78	83	96	H H H	2 2 1	1 1 1	3 3 3	3 3 3	1 1 1
CHIEF	95	93	94	H H H	3 1 3	1 1 1	3 3 3	3 3 4	1 1 1
ASSISTANT CHIEF	81	97	91	H H H	2 2 1	1 1 1	2 1 2	3 3 3	1 1 1
BATTALION CHIEF	93	84	99	H H H	1 2 2	1 1 1	3 3 3	3 3 3	1 1 1
CAPTAIN	72	82	96	H H H	2 2 1	1 1 1	2 3 2	3 3 3	1 1 1

* MINIMIZING ADMINISTRATIVE BURDENS AT LOWER ECHELONS Deals with the supervisorial ability to examine job requirements with a view to eliminating unnecessary, obsolete and time consuming duties in favor of more extensive direct supervision. The chief officers in all departments are fulfilling this responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	5	3	0	3	2	1	0	0
BASIC-GENERAL	15	4	1	4	13	10	1	2	2	1	1	0
IN-DEPTH	11	7	6	7	12	11	9	8	8	6	1	0

Statewide Advisory Committee recommendations

CHIEF 70 3 3DME : ASST CHIEF 45 2 3DME : BATTN CHIEF 30 2 2D3D : CAP 12 2 2DME

* DELEGATION OF AUTHORITY TO SUBORDINATES COMMENSURATE WITH ASSIGNED RESPONSIBILITIES Refers to that knowledge of good supervisorial practices that enables the supervisor to properly delegate authority, so as to enable a subordinate to carry out assignments that involve the activities of other personnel. Most of the personnel in all ranks are involved in the delegation of authority and this is largely accomplished by gaining compliance with predetermined plans and procedures. However, in the rank of captain in all departments, exercise of the ability to evaluate, apply principles and develop alternatives is most evident.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	7	1	0	3	7	3	0	3	10	1	0	1
BASIC-GENERAL	33	11	3	11	41	9	6	10	61	16	22	0
IN-DEPTH	21	16	9	10	22	17	16	14	12	6	6	1

Statewide Advisory Committee recommendations

CHIEF 97 3 3DME : ASST CHIEF 87 1 3DME : BATTN CHIEF 73 1 3DME : CAP 87 2 2D3D

* PROVIDING NECESSARY MEANS TO SUBORDINATES TO PERMIT ACCOMPLISHMENT OF ASSIGNED MISSIONS Requires a working knowledge of the job requirements of subordinate positions plus the realization that the subordinate officers should be best qualified to analyze and determine manpower, equipment, and time needs to accomplish a given assignment. The chiefs and battalion chiefs identify technical competence and the ability to plan, organize and control, as their method for accomplishing this task, whereas the assistant chiefs and the captains rely more on communicative skill and knowledge of human relations for this purpose.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	5	2	0	2	10	2	0	3	4	0	0	0
BASIC-GENERAL	40	10	2	10	44	7	6	5	72	14	22	0
IN-DEPTH	15	11	8	8	17	12	8	12	17	6	5	1

Statewide Advisory Committee recommendations

CHIEF 94 3 3DME : ASST CHIEF 90 2 3DME : BATTN CHIEF 96 2 3DME : CAP 91 2 2D3D

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
ESTABLISHMENT OF RESPECT AND TRUST OF SUBORDINATES	91	89	99	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	100	89	94	H H H	1 3 3	1 1 1	2 2 2	4 4 4	1 1 1
ASSISTANT CHIEF	84	97	99	H H H	3 3 2	1 1 1	2 2 2	3 3 3	1 1 1
BATTALION CHIEF	100	87	100	H H H	2 1 2	1 1 1	2 2 2	3 4 3	1 1 1
CAPTAIN	88	88	99	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
ANALIZING ADMINISTRATIVE PROCEDURES TO IMPROVE EFFICIENCY OF OPERATIONS	41	46	45	H H H	2 2 3	1 1 1	3 3 3	4 3 4	1 1 1
CHIEF	100	100	94	H H H	2 3 3	1 1 1	3 3 3	4 4 4	1 1 1
ASSISTANT CHIEF	84	94	80	H H H	2 2 3	3 3 3	3 3 3	4 3 4	1 1 1
BATTALION CHIEF	67	54	31	M H H	2 2 2	3 3 3	3 3 3	4 4 3	1 1 1
CAPTAIN	18	37	45	H H H	2 2 2	3 1 3	3 3 3	3 3 3	1 1 1
PERIODIC REVIEW OF ADMINISTRATIVE PROCEDURES TO DETERMINE IF DESIRED OBJECTIVES ARE BEING ACHIEVED	36	35	20	M M M	2 2 2	1 1 1	3 3 3	4 3 4	1 1 1
CHIEF	100	96	100	M M M	2 3 3	1 1 1	3 3 3	4 3 4	1 1 1
ASSISTANT CHIEF	81	89	59	M M M	3 2 3	1 3 3	3 3 3	4 4 4	1 1 1
BATTALION CHIEF	63	52	57	M M M	2 2 2	3 3 3	3 3 3	3 3 3	1 1 1
CAPTAIN	12	23	13	M M M	3 2 3	3 1 3	2 3 3	3 3 3	1 1 1

* ESTABLISHMENT OF RESPECT AND TRUST OF SUBORDINATES Refers to the supervisorial training, experience and ability that enables the supervisor to be aware of the importance of these factors in human relations. It is that "knack" for human understanding that tends to promote understanding by subordinates. All personnel have this responsibility and it is generally agreed that a working knowledge of human relations is essential. The chiefs receive training in depth, while most of the other ranks receive basic and general training in this leadership responsibility.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	2	1	2	15	2	0	2	2	0	0	0
BASIC-GENERAL	37	14	4	17	41	13	6	11	54	20	4	0
IN-DEPTH	27	18	8	13	23	19	14	13	32	4	23	0

Statewide Advisory Committee recommendations

CHIEF 94 3 3DME : ASST CHIEF 95 3 3DME : BATTN CHIEF 98 2 3DME : CAP 96 2 2D3D

* ANALYZING ADMINISTRATIVE PROCEDURES TO IMPROVE EFFICIENCY OF OPERATIONS Requires analytical ability and knowledge of supervision and administration of personnel, functions, and records, so that nonessential activities may be eliminated in favor of simplicity and increased productivity. The chiefs and assistant chiefs perform this responsibility in all departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	0	0	2	0	0	0	0	0	0	0
BASIC-GENERAL	16	7	2	5	24	8	3	4	36	1	22	0
IN-DEPTH	12	9	7	7	12	8	8	6	7	1	2	1

Statewide Advisory Committee recommendations

CHIEF 98 3 3D3D : ASST CHIEF 85 2 3D3D : BATTN CHIEF 39 2 3DME : CAP 41 2 2DME

* PERIODIC REVIEW OF ADMINISTRATIVE PROCEDURES TO DETERMINE IF DESIRED OBJECTIVES ARE BEING ACHIEVED Refers to the knowledge and ability necessary to objectively evaluate administrative and operating procedures in relation to the desired objectives. The chiefs and assistant chiefs perform this responsibility in all departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	1	1	0	4	0	0	0	6	0	0	0
BASIC-GENERAL	15	8	4	9	16	4	1	3	10	5	1	0
IN-DEPTH	10	7	6	7	9	5	5	3	2	1	1	0

Statewide Advisory Committee recommendations

CHIEF 98 3 3DME : ASST CHIEF 72 3 3DME : BATTN CHIEF 57 2 3DME : CAP 14 3 2DME

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
RECRUITMENT, INTERVIEW, AND ASSIGNMENT OF PERSONNEL	35	25	3	L L L	2 2 2	1 1 1	2 2 2	4 4 3	1 1 1
CHIEF	92	82	69	L L H	2 3 3	1 1 1	2 2 3	4 4 4	1 1 1
ASSISTANT CHIEF	78	67	37	L M M	2 2 2	1 1 1	2 3 2	4 4 3	1 1 1
BATTALION CHIEF	44	47	11	M H L	2 2 2	3 1 1	2 2 2	3 4 3	1 1 1
CAPTAIN	15	14	0	H L L	2 2 0	3 3 0	2 2 0	3 3 0	1 1 0
APPRAISAL OF PERFORMANCE AND POTENTIAL OF PERSONNEL WITH VIEW OF ADVANCEMENT TO POSITIONS OF GREATER RESPONSIBILITY	65	57	62	L M H	2 2 2	1 1 1	2 2 2	4 4 4	1 1 1
CHIEF	95	93	94	L M H	2 2 3	1 1 1	2 2 2	4 4 4	1 1 1
ASSISTANT CHIEF	66	86	62	M M M	2 2 2	3 1 1	2 2 2	4 3 3	1 1 1
BATTALION CHIEF	89	80	61	L H H	2 2 2	1 1 3	2 2 2	4 4 3	1 1 1
CAPTAIN	55	48	61	M L L	2 2 2	1 1 1	2 3 2	3 4 4	1 1 1
PROVISION FOR GUIDANCE AND COUNSELING OF PERSONNEL TO FURTHER THEIR DEVELOPMENT	63	77	81	M H H	2 2 2	1 1 1	2 2 2	3 3 4	1 1 1
CHIEF	90	75	75	L M H	2 2 3	1 1 1	2 2 2	4 4 4	1 1 1
ASSISTANT CHIEF	63	78	46	H M H	2 2 2	1 1 1	2 2 2	4 3 4	1 1 1
BATTALION CHIEF	89	81	96	M H H	2 2 2	1 1 1	2 2 2	3 3 4	1 1 1
CAPTAIN	54	76	81	H H H	2 2 2	1 1 1	2 2 2	3 4 3	1 1 1

* RECRUITMENT, INTERVIEW AND ASSIGNMENT OF PERSONNEL Involves the supervisorial knowledge necessary to: attract the best possible applicants; effectively evaluate from personal interviews a candidate's potential, experience, knowledge and abilities; and assign personnel to the best advantage of the organization as well as the individual. This is largely done by the chiefs and generally is performed at a low rate of frequency in all ranks. None of the captains in large departments is involved in the recruitment, interview and assignment of personnel.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	1	1	4	0	0	0	0	0	0	0
BASIC-GENERAL	15	6	1	6	10	4	2	3	2	0	0	0
IN-DEPTH	8	4	3	5	8	5	4	3	1	1	1	0

Statewide Advisory Committee recommendations

CHIEF 81 3 3D3D : ASST CHIEF 60 2 3D3D : BATTN CHIEF 20 2 3DME : CAP 4 2 1D2D

* APPRAISAL OF PERFORMANCE AND POTENTIAL OF PERSONNEL WITH VIEW OF ADVANCEMENT TO POSITIONS OF GREATER RESPONSIBILITY Requires the ability to objectively evaluate, rate and counsel personnel to encourage their development to their full capacity, in the interests of both the organization and the individual. Over 90 percent of all chiefs have this responsibility, and the range of frequency extends from a low rate in the small departments, to a high rate in the large departments. The majority of personnel in other supervisory ranks also have opportunity for appraisal and placement of personnel.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	9	1	0	2	7	0	0	0	4	0	0	0
BASIC-GENERAL	25	7	2	9	22	2	1	1	16	8	0	0
IN-DEPTH	22	10	6	8	18	17	14	10	41	12	27	0

Statewide Advisory Committee recommendations

CHIEF 94 2 3D3D : ASST CHIEF 69 2 3D3D : BATTN CHIEF 67 2 3DME : CAP 59 2 2D3D

* PROVISION FOR GUIDANCE AND COUNSELING OF PERSONNEL TO FURTHER THEIR DEVELOPMENT Requires the knowledge and ability necessary to establish equitable procedures for assisting personnel in the attainment of professional growth commensurate with their abilities. In the small and medium departments, the responsibility falls upon the chief officers and in the large departments this responsibility is being handled by the battalion chiefs and captains.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	1	1	0	8	0	0	0	2	0	0	0
BASIC-GENERAL	27	6	1	8	35	7	5	5	55	9	22	0
IN-DEPTH	24	15	8	12	23	18	10	17	22	7	6	1

Statewide Advisory Committee recommendations

CHIEF 81 2 3DME : ASST CHIEF 58 2 3D3D : BATTN CHIEF 93 2 3D3D : CAP 78 2 2D3D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	M-A	PET	W-O		
	S	M	L	S M L	S M L	S M L	S M L	S M L	S	M	L
PERIODIC REVIEW OF PROCEDURES AND PRACTICES IN EFFECT IN PERSONNEL DEVELOPMENT TO DETERMINE OBJECTIVES ARE BEING ACHIEVED	46	59	63	M M M	2 2 2	1 1 1	3 2 2	4 4 3	1	1	1
CHIEF	90	96	81	L M M	2 2 3	1 1 1	3 2 3	4 3 4	1	1	1
ASSISTANT CHIEF	69	81	42	M M M	2 2 2	1 1 3	2 3 3	4 3 4	1	1	1
BATTALION CHIEF	89	73	54	M M M	2 2 2	3 1 1	3 3 2	3 4 3	1	1	1
CAPTAIN	28	52	65	M L M	2 2 2	3 1 1	3 2 2	4 4 3	1	1	1
SYSTEM OF JOB ROTATION, AS APPLICABLE, IN TRAINING OF PERSONNEL TO DEVELOP THEIR POTENTIAL FOR POSITIONS OF GREATER RESPONSIBILITY	41	44	62	L L M	2 2 2	1 1 1	2 2 2	3 3 3	1	1	1
CHIEF	82	89	63	L L M	2 2 3	1 1 1	2 2 3	4 4 4	1	1	1
ASSISTANT CHIEF	63	61	36	M L M	2 2 2	1 1 1	2 2 2	3 3 3	1	1	1
BATTALION CHIEF	70	69	30	L M M	2 2 2	1 1 3	3 2 2	4 4 3	1	1	1
CAPTAIN	25	34	67	M M M	2 2 2	1 1 1	2 2 3	3 3 3	1	1	1
MAINTENANCE OF EXECUTIVE INVENTORY CONTROL TO DETERMINE IF QUALIFIED PERSONNEL ARE BEING TRAINED TO MEET ATTRITIONAL LOSSES IN KEY POSITIONS	22	14	2	M L L	2 2 2	1 1 1	3 3 3	4 4 4	1	1	1
CHIEF	77	82	81	M L L	2 2 2	1 1 1	3 3 3	4 4 4	1	1	1
ASSISTANT CHIEF	38	47	19	L L M	2 1 3	3 3 3	3 3 3	4 3 4	1	1	1
BATTALION CHIEF	22	41	3	M L M	3 1 2	3 1 3	3 3 2	4 4 3	1	1	1
CAPTAIN	8	2	0	M M L	3 2 0	3 3 0	2 2 0	4 4 0	12	1	0

- PERIODIC REVIEW OF PROCEDURES AND PRACTICES IN EFFECT IN PERSONNEL DEVELOPMENT TO DETERMINE IF OBJECTIVES ARE BEING OBTAINED Requires continual assessment of methods used in evaluating results of a personnel development program in order to obtain the most beneficial effects. Approximately 90 percent of the chiefs in all departments evaluate objectives at a low to moderate rate of frequency. Personnel assigned this responsibility in small departments identify the method of accomplishment as technical administrative competency, whereas the medium and large departments emphasize the human relations aspect.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	1	0	8	1	0	2	3	0	0	0
BASIC-GENERAL	15	7	2	5	24	5	1	1	29	2	22	0
IN-DEPTH	21	10	5	8	21	16	10	15	9	2	2	0

Statewide Advisory Committee recommendations

CHIEF 91 2 YES : ASST CHIEF 59 2 YES : BATTN CHIEF 61 2 YES : CAP 58 2 YES

- SYSTEM OF JOB ROTATION, AS APPLICABLE, IN TRAINING OF PERSONNEL TO DEVELOP THEIR POTENTIAL FOR POSITIONS OF GREATER RESPONSIBILITY Involves the ability to provide wide and diversified experience and training opportunities for the development of personnel with potential leadership capabilities. This responsibility lies with the chief officers in the small and medium departments and tends to be delegated to the captains in the large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	4	1	0	1	7	1	0	1	2	0	0	0
BASIC-GENERAL	17	6	1	4	18	2	1	1	50	5	25	0
IN-DEPTH	11	6	5	6	11	4	4	5	3	1	1	0

Statewide Advisory Committee recommendations

CHIEF 80 2 YES : ASST CHIEF 49 2 YES : BATTN CHIEF 41 2 YES : CAP 57 2 YES

- MAINTENANCE OF EXECUTIVE INVENTORY CONTROL TO DETERMINE IF QUALIFIED PERSONNEL ARE BEING TRAINED TO MEET ANTICIPATED LOSSES IN KEY POSITIONS Involves complete and thorough knowledge of the job requirements and training needed to maintain a pool of personnel capable of assuming key positions as vacancies occur. The degree of complexity of such a program will vary with the size of the organization. Approximately 80 percent of personnel at the rank of chief evaluate practices for the determination of qualifying personnel to fill key positions.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	1	0	0	0	0	0	0	0
BASIC-GENERAL	4	2	1	1	4	1	1	0	1	0	0	0
IN-DEPTH	11	7	5	6	6	3	3	1	1	0	0	0

Statewide Advisory Committee recommendations

CHIEF 80 2 YES : ASST CHIEF 31 2 YES : BATTN CHIEF 11 2 YES : CAP 1 2 YES

TABLE 52. SUPERVISORIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	PEN			FRG			S-K			O-M			H-A			PET			W-O		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
KNOWLEDGE OF INDIVIDUAL CHARACTERISTICS OF KEY PERSONNEL AND WHAT QUALITIES WILL ELICIT THEIR BEST EFFORTS	31	46	41	H	H	H	2	2	2	1	1	1	2	2	2	4	3	3	1	1	1
CHIEF	64	61	44	H	H	H	2	2	3	1	1	1	2	2	2	4	3	4	1	1	1
ASSISTANT CHIEF	53	47	35	H	H	H	2	3	2	1	3	1	2	2	2	4	3	3	1	1	1
BATTALION CHIEF	59	71	43	H	H	H	2	3	2	1	1	1	2	2	2	4	4	3	1	1	1
CAPTAIN	17	43	41	H	H	H	2	2	2	1	1	1	2	2	2	3	4	3	1	1	1
ESTABLISHMENT OF RATING SYSTEM FOR EVALUATION OF PERSONNEL IN DUTY PERFORMANCE	30	27	46	L	L	L	2	2	2	1	1	1	2	3	2	4	4	3	1	1	1
CHIEF	74	86	75	L	L	H	2	2	3	1	1	1	2	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	53	47	47	M	L	L	2	1	2	3	3	1	3	2	2	4	3	3	1	1	1
BATTALION CHIEF	44	34	12	L	L	H	1	2	2	1	1	1	2	2	3	4	4	3	1	1	1
CAPTAIN	15	21	49	L	L	L	2	2	2	3	3	1	2	3	3	3	4	3	1	1	1
PLANNED PROGRAM OF PROMOTION	21	19	2	L	L	L	2	1	3	1	1	1	3	3	3	4	3	4	1	1	1
CHIEF	67	93	63	L	L	H	2	3	3	1	1	1	3	3	3	4	4	4	1	1	1
ASSISTANT CHIEF	41	39	23	L	L	L	2	1	3	3	1	1	3	3	3	4	3	4	1	1	1
BATTALION CHIEF	44	26	1	L	L	M	2	1	2	3	1	2	2	3	2	4	4	4	1	1	14
CAPTAIN	5	12	3	M	L	L	3	2	0	3	3	0	3	3	0	3	3	0	1	1	0

* KNOWLEDGE OF INDIVIDUAL CHARACTERISTICS OF KEY PERSONNEL AND WHAT QUALITIES WILL ELICIT THEIR BEST EFFORTS Calls for the knowledge and understanding necessary to accurately appraise the abilities of subordinate personnel and to assign them so as to gain maximum results. Less than 50 percent of the total supervisory personnel in all departments indicated any involvement in this area.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	6	0	0	0	0	0	0	0
BASIC-GENERAL	10	4	1	3	17	2	2	1	34	5	26	4
IN-DEPTH	11	9	6	8	14	8	5	8	2	1	0	0

Statewide Advisory Committee recommendations

CHIEF 58 2 3D3D : ASST CHIEF 43 2 3DME : BATTN CHIEF 49 2 3D3D : CAP 38 2 1D2D

* ESTABLISHMENT OF RATING SYSTEM FOR EVALUATION OF PERSONNEL IN DUTY PERFORMANCE Involves the ability to select or compose an acceptable scale rating system that will effectively evaluate job performance. The chiefs are most involved in the establishment of systems for personnel evaluation. This is generally done semi-annually or annually. Captains in large departments assume this task to a greater extent than do captains in small and medium departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	0	0	3	0	0	0	0	0	0	0
BASIC-GENERAL	9	3	1	2	10	4	4	3	40	1	22	0
IN-DEPTH	10	7	7	4	13	9	9	7	5	5	0	0

Statewide Advisory Committee recommendations

CHIEF 76 2 3DME : ASST CHIEF 48 2 3DME : BATTN CHIEF 19 2 3DME : CAP 40 2 1D2D

* PLANNED PROGRAM OF PROMOTION Requires the knowledge and ability to devise and establish an equitable promotional program that will serve the best interests of the organization and the individual. The chiefs are most involved in planning programs for promotion. Only 1 percent of the battalion chiefs and none of the captains in large departments are involved in promotion planning.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	1	7	0	0	0	0	0	0	0
BASIC-GENERAL	7	4	1	3	7	1	1	0	1	1	1	0
IN-DEPTH	7	3	3	3	4	3	3	3	1	0	0	0

Statewide Advisory Committee recommendations

CHIEF 75 3 3DME : ASST CHIEF 31 2 3D3D : BATTN CHIEF 10 2 3DME : CAP 2 2 1D2D

TABLE 52. SUPERVISCRIAL, ADMINISTRATIVE AND MANAGEMENT FUNCTIONS CONT

	MEN			FRQ	S-K	D-M	H-A	PET	W-O
	S	M	L	S M L	S M L	S M L	S M L	S M L	S M L
RECOGNITION OF OUTSTANDING WORK	48	60	72	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	79	86	88	H H M	2 2 2	1 1 1	2 2 2	4 3 4	1 1 1
ASSISTANT CHIEF	44	69	51	H H H	2 2 2	3 1 1	2 2 2	3 3 3	1 1 1
BATTALION CHIEF	63	61	72	H H H	2 2 2	1 1 1	2 2 4	4 3 3	1 1 1
CAPTAIN	41	57	73	H H H	2 2 2	1 1 1	2 2 2	3 3 3	1 1 1
SYSTEM OF INCENTIVES AND AWARDS	16	19	24	L H M	2 2 3	1 1 1	2 2 2	3 3 3	1 1 1
CHIEF	54	43	69	L L M	2 3 3	1 1 1	2 2 2	3 3 4	1 1 1
ASSISTANT CHIEF	31	36	11	M L M	2 2 2	3 3 1	2 2 2	3 3 3	1 1 1
BATTALION CHIEF	15	27	0	H H L	1 2 0	3 1 0	2 2 0	3 3 0	1 1 0
CAPTAIN	6	14	27	H H H	2 2 2	1 1 2	2 2 3	4 3 3	1 1 1

* RECOGNITION OF OUTSTANDING WORK Involves the ability to appraise the individual in relation to total work results, and to evaluate and give recognition to exceptional quality and quality production levels. This responsibility rests with the higher ranks in the small and medium departments, and is evenly distributed among all ranks in the large departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	2	0	1	0	1	0	0	0	8	0	0	0
BASIC-GENERAL	25	11	0	4	36	10	8	10	56	12	22	0
IN-DEPTH	10	8	7	7	12	12	9	8	3	3	1	0

Statewide Advisory Committee recommendations

CHIEF 84 2 3DRE : ASST CHIEF 54 2 3DME : BATTN CHIEF 69 2 3DME : CAP 67 2 2D3D

* SYSTEM OF INCENTIVES AND AWARDS Requires the ability to devise and administer an equitable and stimulating merit award and incentive program which will encourage individual and group initiative to the advantage of both the organization and the employee. Responsibility here rests predominantly with the chiefs in all departments.

Post Employment Training	S				M				L			
	FD	JC	CU	ST	FD	JC	CU	ST	FD	JC	CU	ST
ORIENTATION	1	0	0	0	0	0	0	0	0	0	0	0
BASIC-GENERAL	6	1	0	1	12	3	2	2	24	2	22	0
IN-DEPTH	4	3	4	2	5	5	3	4	0	0	0	0

Statewide Advisory Committee recommendations

CHIEF 50 3 3D3D : ASST CHIEF 22 2 3DME : BATTN CHIEF 6 1 2DME : CAP 23 2 1D2D

TABLE 53. REVIEW OF SERVICE PROVIDED BY THE CALIFORNIA STATE FIRE TRAINING PROGRAM

	PERCENT OF RESPONSE								
	SERVICE ADEQUATE			ADDITIONAL SERVICE REQUESTED			NO RESPONSE		
	S	M	L	S	M	L	S	M	L
1. INSTRUCTIONAL MATERIALS - MANUALS, PAMPHLETS, VISUAL AIDS, ETC.	33	31	43	61	64	54	6	5	3
2. SPECIALIZED SCHOOLS (SEMINARS, WORKSHOPS)	36	34	35	59	62	60	5	4	5
3. DEPARTMENTAL OR ZONE SCHOOLS CONDUCTED BY STATE INSTRUCTORS IN THE FOLLOWING AREAS									
A. FIRE ADMINISTRATION	29	31	41	66	65	54	5	4	5
B. LEADERSHIP AND SUPERVISION	33	27	38	60	67	58	7	6	4
C. INSTRUCTOR TRAINING	48	48	47	46	45	48	6	7	5
D. FIRE CONTROL, MANIPULATIVE, AND TECHNICAL COURSES BASIC AND ADVANCED	29	44	47	65	51	47	6	5	6
4. RESEARCH	30	20	26	63	74	67	7	6	7
5. COUNSELING AND CONSULTATIONS	44	32	45	48	61	48	8	7	7
6. SUPERVISION AND EVALUATION OF LOCAL TRAINING PROGRAMS	33	37	55	60	58	41	7	5	4

REVIEW OF SERVICE PROVIDED BY THE CALIFORNIA STATE FIRE TRAINING PROGRAM

The findings related to the amount of service provided by the California State Fire Training Program, as displayed in Table 53, strongly indicate a need for additional services. A number of individuals did not respond to this portion of the survey; however, the percent was low, ranging from 3 to 8 percent and varying in degree for each item and department size. The mode for no response was 5 percent.

Only one item approached 48 percent as being adequate for all three categories of department size. This was item 3C, "Instructor Training," yet the level of requests for additional service for this particular item was almost as great as those responses indicating adequate service. Thus, it can be inferred that this service must be

maintained at the present level. One additional item, 5, "Counseling and Consultation," received less than 50 percent for additional service from both small and large departments; this percent, however, was greater than the indication that the service was adequate. Here again, present activities for this item will have to be maintained. Item 6, "Supervision and Evaluation of Local Training Programs," indicates that large department requests for additional service is below the percent indicating that the present service being rendered is adequate. This result appears logical because of the amount of available supervisorial personnel available in large departments. It should be noted that there was a 41 percent request for additional service. All indications of need for additional items for all departments indicate the need for extensive increase in services to all sizes of fire departments.

Recommendations

In analyzing the results of this portion of the study as displayed in Table 53, the following recommendations for the services of the California State Fire Training Program are made:

1. Increase all services as identified in Table 53, except for the maintenance of present service levels as discussed in the forthcoming recommendations.
2. Increase substantially the development of instructional materials, manuals, pamphlets, visual aids, etc.
3. Increase substantially the operation of specialized schools, seminars, and workshops.
4. Increase substantially departmental or zone schools in Fire Administration, and Leadership and Supervision, and maintain the present degree of instructor training.* From discussions by the research analyst during the study, it was found that departmental or zone schools should maintain basic courses in fire control, as well as manipulative and technical courses; however, the present number of advanced courses in this area should be increased. The requests for additional service for advanced courses is reflected by the study's findings.
5. Increase substantially the research activities for the improvement of instruction, curriculum, and instructional materials.
6. Maintain counseling and consultation service at the present level, except that service to medium size departments should be increased.
7. Increase supervision and evaluation of local training programs for small and medium size departments. De-emphasize service to large departments unless special requests are made.

It is apparent from the requests for additional service that the Fire Training Program will need an increase in staff. To maintain flexibility of movement to any part of the State in order to provide the service requested by many fire departments, the California State Fire Training Program must be strengthened. The present job categories of the staff should be reclassified so that instructors are redesignated as supervisors, to reflect the actualities of their role in the Fire Service Training Program. It is through a coordinated unit as now exists that services requested can be provided throughout the State, with the overriding element of uniform dissemination of technical information. The California State Fire Training Program should be sustained as the nucleus for fire service educational activities.

*A departmental school is conducted for one fire department or agency; a zone school is operated for more than one fire department or agency.

General Recommendations of the Statewide Advisory Committee

The Statewide Advisory Committee at its final meeting, January 12, 1968, made a number of general recommendations in addition to the specific recommendations displayed on the preceding pages. Some of the general recommendations do not relate directly to the study findings, but they express the Committee's desire for additional activities for implementation or study, for the improvement of fire service personnel. For this purpose, the Committee recommended the following steps be taken:

1. Provide copies of the study report to the Educational and Professional Standards Committees of the California Fire Chiefs' Association for their use in making recommendations for minimum education and training standards for all ranks of the fire service.
2. Implement the findings of the study through further development of the Uniform Fire Science Training Program in California.
3. Evaluate present programs in light of the standards identified in the study and make changes necessary to meet indicated needs.
4. Develop new and supplemental programs to fulfill training and educational needs identified by the study.
5. Establish standards and instructional programs for pre- and post-promotional training for all ranks in the fire service, including pre-employment training.
6. Establish a State Commission on Training and Educational Standards, whose activities are coordinated with the State Fire Training Program. This recommendation was strongly emphasized.
7. Conduct follow-up research of the survey data to extract all additional useful data that will benefit the fire service.

Chapter 4

Implementation

Fire Service Training in California

Education and training for fire service personnel in California is currently available through at least five types of agencies. These are: (1) Respective individual fire departments, (2) The California Fire Training Program, (3) Community junior colleges, (4) State colleges, and (5) Universities.

The education and training conducted by these agencies is extremely variable. Fire departments, for example, range in size from those having very small volunteer or part paid personnel to very large fully paid personnel. Training capabilities of an individual fire department are almost directly proportional to its size. The California Fire Training Program conducts training for personnel representing all sizes and types of fire departments. The scope of training offered by the Program ranges from complete basic training for all personnel in small fire departments to specialized training for selected personnel in large fire departments. Certain junior colleges offer only a limited number of courses, while others offer a variety of programs, including pre-entry, recruit and post-entry courses which can lead to an associate degree. The roles of state colleges and universities in fire service education and training are not, at this time, specifically identified. Training programs are affected by such variables as geographic location, levels of training due to the type of fire protection necessary or desired, and budgetary limitations. The following description of training conducted by various agencies, therefore, is of necessity general.

Individual Fire Departments. The quantity and quality of training provided on an in-service basis by local fire departments is almost directly proportional to the size of the department. Very small fire departments are seldom provided with a training specialist, even on a part-time basis. Very large departments usually maintain a training division filled with men from the ranks. These men devote their entire efforts organizing, supervising and conducting training programs for personnel, from recruit to company officer level. Departments with personnel complements between the very small and the very large may assign training responsibilities to one or more men on a part-time or full-time basis, depending upon budgetary limitations.

Historically, smaller fire departments have called upon the California Fire Training Program to provide them with complete training services. Fire departments which cannot maintain a training specialist have found the Fire Training Program to be their only available source of organized training.

Moderate size fire departments also use the Fire Training Program's services extensively. Services to these departments include consultation in developing training programs, evaluation of existing programs, provision of training materials and manuals, and instruction for training officers, company officers and chief officers, as well as instruction in specialized fields.

Very large fire departments utilize the Fire Training Program's services to provide their personnel with officer and instructor training. They have assigned key personnel to attend workshops and seminars conducted by the Program.

Training which is conducted by individual fire departments without the assistance of the Fire Training Program usually includes:

1. Recruit Training

   In very small departments, this is usually an informal process conducted by company officers on an on-the-job basis. Generally, this is a process of absorption rather than an organized training system. In moderate size departments the process is usually more formalized, and may be conducted by either a company officer or a training specialist. In certain instances this training is conducted on an on-the-job basis, while in other instances recruits are assigned to the training specialist for a period of time before they are assigned to a fire company. In very large fire departments the process is exceedingly formalized, involves training for a specific amount of time, and is conducted either by, or under the direction of, a training specialist.

2. Continuing In-service Training

   Most of this type of training is conducted by company officers and is designed to maintain those knowledges and skills necessary to deal with the ever changing fire problem. Where departments provide training specialists, such specialists may establish schedules for various types of training to be conducted by company officers, or may actually conduct certain types of specialized training activities.

3. Training in Specialized Fields

   Training specialists and/or company officers, with assistance from public utilities, military establishments, other city agencies, insurance organizations, The State Fire Marshal's

office, The California Disaster office, etc., usually conduct short courses in such areas as:

a. Handling natural gas emergencies

b. Hazards of electricity

c. Telephone courtesy

d. Explosive materials

e. Building and fire and panic safety codes and their use

f. Driver training

g. Disaster operation

4. Training for Officers and Specialists

Chief officers and/or training specialists may conduct in-service training sessions for potential company officers, company officers, fire prevention inspectors, fire alarm operators, etc.

The California Fire Training Program. Services provided by the California Fire Training Program have been briefly described as they relate to that training which is conducted by individual fire departments. A more detached description of these services follows:

1. Providing complete instruction in basic fire service technical subjects and manipulative skills for personnel in individual fire departments or groups of fire departments within a given area.
2. Providing instruction in administration, leadership and supervision, and instructional methods for fire service officers.
3. Providing instruction in instructional methods for junior college fire science instructors, enabling such instructors to fulfill requirements for a part-time vocational teaching credential.

4. Providing statewide workshops, seminars, and schools offering specialized instruction in such fields as fire and arson investigation, fire prevention, instructional methods for in-service and college fire sciences instructors, disaster control organization and operations, oil fire control, etc.
5. Providing regional institutes and schools affording specialized instruction in such fields as fire administration, fire strategy, oil fire control, etc.
6. Providing workshops designed to study particular fire department problems.
7. Providing assistance to individual fire departments in organizing and operating in-service training programs.
8. Providing assistance to junior colleges in developing and operating fire science and fire service training programs.

Other services provided by the Program which are related to training include publication of training manuals and instructional materials, research projects to study training methods and techniques, supervision of part-time instructors in the Fire Service Training Curriculum, and innumerable miscellaneous services which cover the entire field of fire service education and training.

Community Junior Colleges. Approximately 52 junior colleges offer courses in fire sciences for students on a pre-entry basis as well as for employed fire service personnel. Participation in the Uniform Fire Science Curriculum can lead to an associate degree in either arts or science. Courses within this curriculum which are specific to the occupation are taught by experienced fire service personnel who hold vocational teaching credentials. Two recent developments in the junior

college program are (1) Recruit training for newly appointed personnel, and (2) Training in basic skills on an off-campus basis.

Recruit training by junior colleges involves short courses which are open only to employed fire service personnel within the college district. Enrollment usually includes recruits from a number of fire departments. Some colleges offer a complete package which includes training in both technical and manipulative subjects. Other colleges offer only technical instruction and, in this case, participating fire departments conduct manipulative training for their own personnel. In this instance, recruits attend the college approximately three days per week and return to their respective departments for the balance of the work week. Recruit training courses operate on an eight hour per day basis over a period of five to six weeks. Men who successfully complete such courses receive five to seven units of non-transferable credit toward an associate degree.

Fire service training conducted by junior colleges on an off-campus basis is currently in an embryonic stage. This type of training is similar to that which once was offered by the State Fire Training Program. There are almost 1,000 fire departments in the state, of which the majority utilize the Fire Training Program for training in basic skills. The Program Staff is limited and, therefore, is unable to provide adequate service in this field. The Program Staff can assist junior colleges to organize and conduct such services. Services by the Program Staff in this area include training instructors, developing instructional materials, scheduling courses, and assisting and supervising instructors. Off-campus courses are necessary for a number of reasons. Among them are: (1) Fire apparatus and equipment are required as training aids. (2) Communities may be

located at some distance from the campus, and personnel cannot leave the community unprotected in order to participate in on-campus courses, and (3) Certain Fire Service personnel will not, at the present time, attend the fire science courses which are offered on campus. Off-campus training, therefore, is necessary in order to prepare and stimulate these men to participate in the Fire Science curriculum.

The Fire Science curriculum is designed to supplement a continuous training program. It is not an entity within itself. Since the majority of fire departments are incapable of conducting well rounded in-service training, their personnel do not receive full benefit from the Fire Science curriculum. Off-campus training in basic skills will complement, as well as increase enrollment in the Fire Science curriculum.

The role of the community junior college in the field of training fire service personnel will expand as new programs and concepts are developed. The State Fire Training Program has a vital responsibility for the development of programs, concepts, methods, materials, and qualified instructors, in order to assist junior colleges in their expanded role.

State Colleges. State colleges offer general courses in government and public administration which lead to Baccalaureate degrees. At present, only a limited number of fire service personnel are enrolled in such courses.

California State College at Long Beach offers a fire administration curriculum through its criminology department. Other state colleges, at this time, do not provide courses which are specifically related to the fire service.

Universities. The University of Southern California offers a certificate and a degree program in public administration which includes a

fire administration curriculum. Participation in this program has been severely limited in recent years.

University of California Extension, in cooperation with the State Fire Training Program, annually sponsors a Fire and Arson Investigation Seminar, a Fire Prevention Seminar, and a Fire Service Staff and Command School. Participation in these training activities has been increasing each year. Additionally, University Extension, in cooperation with the Bureau of Industrial Education, offers courses which fulfill the requirements for vocational teaching credentials. The fire service utilizes this service extensively in order to prepare its personnel to teach in junior colleges.

Qualifications For Fire Service Instructors. Fire service training, in order to be effective, must be conducted by professionally trained instructors. A trained instructor is an individual who has significant fire service occupational experience and professional teacher preparation. Loren S. Bush, in his study of fire science programs in the junior colleges, found that the most serious criticism of the program was the inadequate and incompetent instructor.[3] His study goes on to recommend that high standards for instructors be established and maintained. Significant suggestions in Bush's study regarding instructors point out that a baccalaureate or master's degree in liberal arts is not in itself the basic qualification for an instructor. It is a known fact that a school program can die for lack of a competent instructor, for the instructor is the heart of the instructional process.

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[3]Loren S. Bush, "A Study of the Fire Science Program in Junior Colleges from the Fire Service View Point" (Prepared for California State Department of Education, Bureau of Industrial Education, 1965), p. 14. (Mimeographed.)

The significance of the instructor's ability to teach must be determined by his professional teacher training, his education, and his fire service experience in the subject matter, as well as in pertinent related areas in which he plans to teach. An exception to the requirement for fire science experience applies to instructors who give instruction in the related technical math and science subjects. However, it is imperative that these instructors have the ability to relate their subject to the practical applications and problems unique to the fire service.

Suggested Curriculum

A suggested curriculum for pre-employment, pre-promotional and post-promotional training for all ranks has been developed from the study findings and the recommendations of the Statewide Advisory Committee. For rank of fireman, it also includes suggestions for recruit training.

The curriculum is designed with the criteria that a trained instructor having both fire service occupational experience and professional teacher preparation will teach the courses at a site having appropriate facilities and equipment, or having an arrangement with a fire department for the operation of a coupled program.

To eliminate lengthy descriptions, a code is used in the suggested curriculum charts. The code is simple and uses a number to identify the technical knowledge and manipulative skill learning level and an alphabetical letter to identify instructional methods and facility requirements.

Description of Codes Used in Suggested Curriculum Charts

Technical Knowledge and Manipulation Skill

Learning Levels

The Code System

1. Knowledge - Knowledge of where information is to be found and

the ability is to follow directions.

2. Comprehension - Ability to interpret information and drawings needed in performing a job.

3. Application - Knowledge and understanding of principles and the ability to apply them to specific situations.

4. Analysis - Ability to break down a malfunction into its fundatmental parts in order to trouble shoot.

5. Synthesis - Ability to put together knowledge of principles and procedures to complete repairs including the construction of new or substitute parts.

Instructional Methods and Facilities Required

The Code System

W. Lecture and Demonstration - can be conducted with standard classroom facilities.

X. Lecture, Demonstration and Laboratory - requires special equipment facilities, such as: fire service tools; hose, nozzles, and fittings; ladders, fire extinguishers, fire protection systems, fire alarm equipment and auto shop equipment, in addition to standard chemistry and physics laboratories.

Y. Lecture, Demonstration and Field - requires facilities not normally available on school campuses, such as drill towers, fire buildings, motor fire apparatus, drafting pits, operating fire alarm and communication systems, etc.

Z. Field - may be conducted, in part, utilizing standard classroom facilities in addition to actual operating fire service and related facilities. Includes organized and supervised in-service training, such as workshops, seminars, institutes, short courses and other formalized training, in addition to day-to-day experiences which are evaluated in terms of recognized criteria.

The following explanations are provided to help in interpretation of the curriculum charts.

1. Blank spaces in the Fireman column indicate either that a very low percentage perform the task or the task is too advanced for the rank. Therefore, it should not be part of the curriculum.
2. Blank spaces in the Engineer and Captain ranks indicate that the level of training required for the next lower rank is sufficient but must be maintained through review or on-the-job experience.
3. Blank spaces in the Fire Prevention Inspector rank are based on the assumption that prior to becoming an Inspector the individual has met all of the requirements for Fireman rank, including the Post level. Therefore, the curriculum includes only the task needing training for the specialty.
4. Blank spaces in the Alarm Operator and Master Mechanic ranks indicate that in their job assignments no previous fire service training is needed for the particular task.

For ease in reading the suggested curriculum, this report should be turned 90° clockwise.

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Building and Grounds													
Maintain Fire Station	1 W	1 Y	2 Z	3 Z						1 Y	2 Z	1 Y	2 Z
Obtain house supplies			1 Z	2 Z		3 Y				1 W	2 Z	2 Y	
Operate and maintain gasoline and oil pumps	1 W	1 Y	2 Z	3 Y									2 Y
Operate and maintain fire station heating and cooling equipment			1 Z	3 Y								2 W	3 Z
Make minor station repairs			1 Z	3 Z									
Maintain water, gas and electricity			1 Z	2 Z									
Maintain fire station grounds	1 W	1 Y	2 Z										
Maintain training facilities		1 Y	2 Z										
Flag and Parade Etiquette													
Use procedures for displaying colors	1 W	2 Y				3 Y							
Use procedures for handling colors	1 W	2 Y				3 Y							
Equipment													
Inspect and maintain leather		1 Y	3 Y										

	F/M			ENG	CAPT	INSP	A/O	MECH
	PRE	RECRUIT	POST	PRE POST	PRE POST	PRE POST	PRE POST	PRE POST
Inspect and maintain salvage covers	1 W	2 Y	3 Z					
Inspect and maintain hose and couplings	1 W	2 Y	3 Z					
Recouple hose			2 Y		3 Z			2 Y
Inspect and maintain hydrants, nozzles, and fittings	1 W	2 Y	3 Z					2 Y 3 Z
Inspect and maintain holders, clamps, and keepers		1 Y	2 Z	3 Z				
Inspect and maintain lighting equipment		1 Y	3 Y	3 Z				2 Y 3 Z
Inspect and maintain tools		1 Y	3 Z					2 Y
Inspect and recharge extinguishers	1 X	2 Y	3 Z	4 Z				1 Y
Inspect, test, and maintain ropes	1 X	2 Y	3 Z					
Inspect, test, and maintain ladders	1 X	2 Y	3 Z					2 Y 3 Z
Inspect and replenish first aid equipment		1 Y	3 Z					
Inspect equipment after runs		1 W	2 Z	3 Y 3 Z				
Inspect, test, and maintain breathing apparatus	1 X	2 Y	3 Z	4 Z				
Make hydrant flow test		2 W	3 Y	3 Z				

	PRE	F/M RECRUIT	POST	ENG PRE	POST	CAPT PRE	POST	INSP PRE	POST	A/O PRE	POST	MECH PRE	POST
Driving													
Utilization of motor vehicle code	2 W		3 W									2 W	
Utilization of department driving rules		2 W	3 Y	4 Y								2 W	3 Y
Utilize defensive driving techniques	2 W	2 Y	3 Z	4 Y								3 Y	3 Z
Drive apparatus		2 Y	3 Z	4 Y								3 Y	3 Z
Operate tiller													
Spotting of apparatus		2 Y	2 Z	3 Y									
Protection of equipment	1 W	2 Y	2 Z	3 Y									
Use of lights, sirens	1 W	1 Y	3 Y	3 Z									
Operate radio equipment	1 X	2 Y	3 Z							2 Y	4 Z	2 X	
Pumps													
Make suction connection		1 Y	3 Z	4 Y								2 Y	
Make discharge connection		1 Y	3 Z	4 Y								2 Y	
Operate booster pumps		1 Y	3 Z	4 Y								2 Y	
Read and interpret gauges		1 Y	3 Z	4 Y								2 Y	3 Z
Operate pump from hydrant		1 Y	3 Z	4 Y								2 Y	3 Z
Operate pump from draft		1 Y	3 Z	4 Y								2 Y	3 Z
Operate pumps in relay		1 W	2 Y	3 Y	4 Z								
Maintain pumps		1 W	2 Y	3 Y								3 Y	3 Z
Trouble shoot pump operations		1 W	2 Y	3 Y	4 Z							3 Y	4 Z

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Apparatus													
Wash, clean, and polish apparatus		1 Y	3 Z										
Inspect and maintain tires		1 Y	2 Z	3 Y								1 Y	2 Z
Inspect and maintain drive systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain cooling systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain fuel systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain lubrication systems													
Inspect and maintain miscellaneous operating equipment		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect, maintain, and recharge storage batteries		1 Y	2 Z	3 Y								2 Y	3 Z
Inspect and maintain warning systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain starting systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain lighting systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain ignition systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain braking systems		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain hydraulic systems		1 Y	2 Z	3 Y								3 Y	4 Z

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Identify apparatus malfunction		1 Y	2 Z	3 Y								3 Y	4 Z
Inspect and maintain power steering		1 Y	2 Z	3 Y								3 Y	4 Z
<u>Handling Forcible Entry and Miscellaneous Tools</u>													
Operate carrying tools	1 X	2 Y	3 Y										
Operate digging tools	1 X	2 Y	3 Y										
Operate striking tools	1 X	2 Y	3 Y										
Operate battering tools	1 X	2 Y	3 Y										
Operate prying tools	1 X	2 Y	3 Y										
Operate lighting tools	1 X	2 Y	3 Y										
Operate sawing tools	1 X	2 Y	3 Y									2 Y	
Operate boring and drilling tools	1 X	2 Y	3 Y									2 Y	3 Z
Operate cutting tools	1 X	2 Y	3 Y									2 Y	3 Z
Operate fusing tools	1 X	2 Y	3 Y									2 Y	3 Z
Operate air moving equipment	1 X	2 Y	3 Y										
<u>Lifting and Hoisting Equipment</u>													
Operate lifting tools	1 X	2 Y	3 Y									2 Y	3 Z
Operate hoisting and pulling equipment	1 X	2 Y	3 Y									2 Y	3 Z

	F/M			ENG	CAPT	INSP	A/O	MECH
	FHE	RECRUIT	POST	FHE POST	FHE POST	FHE POST	FHE POST	FHE POST
Handling Extinguishers, Generators, and Proportioners								
Operate pressure type extinguishers	1 X	2 Y	3 Z					1 Y 2 Z
Operate chemical reaction type extinguishers	1 X	2 Y	3 Z					1 Y 2 Z
Operate pump type extinguishers	1 X	2 Y	3 Z					1 Y 2 Z
Operate foam generators	1 W	2 Y	3 Y					
Operate foam proportioners	1 W	2 Y	3 Y					
Handling Hose, Nozzles, and Fittings								
Connect and operate nozzles, valves, and fittings	1 X	2 Y	3 Y					
Couple and uncouple hose	1 X	2 Y	3 Y					
Extend and reduce lines of hose	1 X	2 Y	3 Y		4 Z			
Siamese lines of hose	1 W	2 Y	3 Y		4 Z			
Roll, fold, carry, reel, and unreel hose	1 W	2 Y	3 Y					
Operate hose jackets and clamps	1 W	2 Y	3 Y					
Replace damaged section of hose	1 W	2 Y	3 Y					
Load hose on carrier	1 W	2 Y	3 Y					

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Handling Hose													
Lay single line of hose	1 W	2 Y	3 Y	4 Z									
Lay multiple lines of hose	1 W	2 Y	3 Y	4 Z									
Lay hose lines above street level	1 W	2 Y	3 Y	4 Z									
Connect hose lines to auxiliary appliances	1 W	2 Y	3 Y			4 Z							
Operate hydrants	1 W	2 Y	3 Y	4 Z									
Operate batteries, monitors, turret pipes, ladder pipes	1 W	2 Y	3 Y	4 Z									
Operate water towers	1 W	2 Y	3 Y	4 Z									
Handling Ladders													
Carry, raise, and lower straight, roof, attic, and extension ladders	1 W	2 Y	3 Y			4 Z							
Climbing, locking-in on, and footing ladders	1 W	2 Y	3 Y										
Operate aerial ladders and elevated platforms	1 W	2 Y	3 Y	4 Y	4 Z								
Use ladders as improvised equipment	1 W	2 Y	3 Y			4 Z							
Release and lower fire escape ladders	1 W	2 Y	3 Z										
Carry, raise, and lower pompier ladders	1 W	2 Y	3 Z										

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Handling Rescue Equipment													
Use canister type gas masks	1 X	2 Y	3 Y			4 Z							
Use self-contained breathing apparatus	1 X	2 Y	3 Y			4 Z							
Use dragging tools													
Use life net	1 W	2 Y	3 Y			4 Z							
Use life gun, lines, and belts	1 W	2 Y	3 Y			4 Z							
Use evacuator													
Use detection instruments	1 X	2 Y	3 Y			4 Z		4 Y	4 Z				
Building Equipment													
Operate elevators	1 W	2 W	3 Z										
Operate fire doors and shutters	1 W	2 W	3 Z					3 Y	3 Z				
Making Diagnosis													
Inspect patient and diagnose symptoms	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Observe surroundings	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Determine case history	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treating Emergencies													
Maintain open air passage	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Perform manual or mechanical resuscitation and cardiac massage	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Control bleeding and treat wounds	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat for heart malfunction	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat for apoplexy	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat for respiratory, circulatory, or nerve poisons	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat burns	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat for heat exhaustion, heat stroke or excessive cold	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treat for fractures, dislocations, strains and sprains	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Apply treatment in childbirth emergencies	2 X	2 Y	3 Y			4 Z							
Treat for traumatic, electrical, diabetic, insulin, and emotional shock	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treatment for convulsions and fits	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treatment for eye injuries	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Treatment for multiple casualties	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Transporting Patient													
Perform manual lifts and carries	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	
Improvise and provide transportation	2 X	2 Y	3 Y			4 Z				2 Y		2 Y	

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Controlling Hazards													
Utilize fire codes	1 W	1 X	2 Y			3 Y	4 Z	2 Y	4 Y	1 W	2 Y		
Use standards and publications of A.I.A., Engineering and Safety Department, and N.F.P.A.	1 W	1 X	2 Y			3 Y	4 Z	2 Y	4 Y				
Utilize laws, ordinances, and safety regulations	1 W	1 X	2 Y			3 Y	4 Z	2 Y	4 Y	1 W	2 Y		
Issue permits, licenses, etc.		1 Y				2 Y	3 Y	2 Y	4 Y	1 W	2 Y		
Check plans and blueprints						2 Y		3 Y	4 Y				
Identify fundamentals of type I-II-III-IV-V construction; purposes of ligh wells, smoke towers, monitors, fire escapes, penthouses, roof ventilators, skylights, dumb waiters, and elevators, their advantages and disadvantages to fire control	1 W	1 Y	2 Y			3 Y	4 Y	3 Y	4 Y				
Identify fire, lighting, heating, power, and dwelling house hazards and their safeguard	1 W	1 Y	2 Y			3 Y	4 Y	3 Y	4 Y				
Identify commonly found miscellaneous hazards	1 W	1 Y	2 Y			3 Y	4 Y	3 Y	4 Y				
Apply mechanical principle to chimneys and flues in dwellings		1 W	2 W			2 Y	3 Y	3 Y	4 Y				
Apply mechanical principle to types of construction and types of occupancy		1 W	2 W			2 Y	3 Y	3 Y	4 Y				

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Making Inspections													
Make exterior and interior surveys	1 W	1 X	2 Y			3 Y	3 Z	3 Y	4 Y				
Inspect and test auxiliary fire fighting equipment	1 X	1 X	2 Y			3 Y	3 Z	3 Y	4 Y				
Inspect refrigeration, ventilation, and heating systems	1 W	1 W	2 Y			3 Y	3 Z	3 Y	4 Y				
Inspect electrical appliances and systems	1 X	1 X	2 Y			3 Y	3 Z	3 Y	4 Y				
Inspect special hazards	1 W	1 W	2 Y			3 Y	4 Y	3 Y	4 Y				
Inspect storage, handling, and transportation of flammable liquids and gas	1 W	1 W	2 Y			3 Y	4 Y	3 Y	4 Y				
Inspect storage, handling, and transportation of explosives	1 W	1 W	2 Y			3 Y	4 Y	3 Y	4 Y				
Make company fire prevention inspections	1 W	2 Y	3 Z			3 Y	4 Z						
Reporting and Recommending													
Make required fire prevention reports	1 W	1 X	2 Y			3 Y		3 Y	4 Z				
Maintain fire prevention records	1 W	1 X	2 Y			3 Y		3 Y	4 Z				
Make recommendations for elimination of fire hazards	1 W	1 Y	2 Y			3 Y		3 Y	4 Z				

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Fire Alarm System													
Identify duties of the fire alarm superintendent and his personnel						2 Y				2 Y	4 Y		
Receive and transmit box alarms	1 X	2 Y	3 Z							2 Y	4 Y		
Receive and transmit special and greater alarms						2 Y	3 Y			2 Y	4 Y		
Make running card systems						2 Y	3 Y			2 Y	3 Y		
Operate PBX board										2 X	4 Y		
Receive and transmit still alarms	1 W	1 W	2 Y							1 W	3 Y		
Receive and transmit telephone alarms	1 W	1 W	2 Y							1 W	3 Y		
Handle private and business telephone calls	2 X	2 X	3 Z					3 Y	4 Z	2 X	3 Y		
Place street box back in service	1 X	2 Y						3 Y		2 X	3 Y		
Test fire alarm switchboard and circuits										2 Y	4 Y		
Use fire alarm plans and specifications										2 Y	4 Y		
Repair and maintain fire alarm equipment										2 Y	4 Y		
Identify, assemble, and record engineering data pertaining to fire alarm systems										2 Y	3 Y		
Utilize pamphlets and general orders applicable to fire alarm	1 W	1 W						2 W	3 W	2 W	3 W		

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Reports and Records													
Make required fire alarm reports	1 W	1 W	2 W					3 W		2 W	3 W		
Fill out fire alarm forms	1 W	1 W	2 W					3 W		2 W	3 W		
Maintain fire alarm records	1 W	1 W	2 W					3 W		2 W	3 W		
Strategy													
Make size-up	1 W	2 W	3 Y					3 Z	4 Y				
Tactics													
Utilize rescue techniques	1 W	2 Y	3 Y					3 Z	4 Y				
Utilize exposure tactics	1 W	2 Y	3 Y					3 Z	4 Y				
Utilize ventilation methods	1 W	2 Y	3 Y					3 Z	4 Y				
Utilize method to confine fires	1 W	2 Y	3 Y					3 Z	4 Y				
Utilize method to extinguish fires	1 W	2 Y	3 Y			3 Z	4 Y						
Use overhaul methods	1 W	2 Y	3 Y			3 Z	4 Y						
Control traffic		1 W	3 Z										
Obtain assistance	1 W	1 W	2 Y			3 Y				1 W	2 Y		
Place apparatus and equipment	1 W	1 W	3 Y			3 Z							
Return unneeded apparatus		1 W	2 Y			3 Y							
Special Type Fires													
Extinguish common carrier fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish brush and grass fires	1 W	2 Y	3 Y			3 Z	4 Y						

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Extinguish fires in places of public assemblage	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish fires in hospitals and institutions	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish underground fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish single-story structural fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish multiple-story structural fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish basement fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish petroleum fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish liquefied petroleum fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish fires in electrical equipment	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish chemical fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish fires in ammunition dumps	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish fires in aircraft	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish marine fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish radioactive material fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish cryogenic material fires	1 W	2 Y	3 Y			3 Z	4 Y						
Extinguish pyrophoric material fires	1 W	2 Y	3 Y			3 Z	4 Y						

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Demolition													
Use explosives													
Use mechanical devices						2 W	3 W						
Major Disaster Plan													
Use disaster plans	1 W	2 W				3 W	4 W			2 W	3 W		
Folding and Spreading Salvage Covers													
Fold, carry, spread, and hang covers	1 X	2 X	3 Y			3 Z							
Use covers as improvised equipment	1 X	2 X	3 Y			3 Z							
Cover roof openings	1 W	2 Y	3 Y			3 Z							
Protection of Building Contents													
Protect floor and wall coverings	1 X	2 X	3 Y			3 Z							
Protect furnishings, chattels, machinery and merchandise	1 X	2 X	3 Y			3 Z							
Control of Water													
Operate sprinkler systems	1 X	2 Y	3 Y			3 Z							
Operate sprinkler head shut-off and wrenches and restore sprinkler system to service	1 X	2 Y	3 Y			3 Z							

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Overhauling Premises and Controlling Utilities													
Operate sweeping and drying tools	1 X	2 Y	3 Y			3 Z							
Operate draining devices	1 X	2 Y	3 Y			3 Z							
Remove water	1 X	2 Y	3 Y			3 Z							
Control public service utilities	1 X	2 Y	3 Y			3 Z							
Remove debris	1 W	2 Y	3 Y			3 Z							
Remove hazards	1 W	2 Y	3 Y			3 Z							
Safeguard property	1 W	2 Y	3 Y			3 Z							
Fire Investigation													
Identify and preserve evidence	1 W	2 Y	3 Y			3 Z	4 Y	3 Z	4 Y				
Identify the cause of fire	1 W	2 Y	3 Y			3 Z	4 Y	3 Z	4 Y				
Identify data and make proper records		1 W				3 Y		3 Y	4 Y				
Identify values and losses						3 Y		3 Y	4 Y				
Inspect premises		1 W	2 Y			3 Y		3 Y	4 Y				
Guard property	1 W	1 W	2 Y			3 Y		3 Y					
Interview witnesses and suspects						3 Y	3 Z	3 Y	4 Y				
Serve subpoenas													
Make arrest						1 W		3 Y	4 Y				
Make chemical analysis						1 W		3 Y	4 Y				

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Prepare evidence for district attorney	1 W	1 W				3 W		3 W	4 W				
Testify as an expert witness in court													
Investigate information of anticipated fires						I W		2 W	3 W				
<u>Arson Investigations</u>													
Identify evidence and types of arson		1 W				3 Y		3 Y	4 Y				
Utilize other law enforcement agencies	1 W	1 W				3 W	4 W	3 W	4 W				
Identify investigative and court procedure						2 W		3 W	4 W				
Maintain records of know arsonists						1 W		2 W	3 Z				
Identify methods and motives used by arsonists, children, and pyromaniacs	1 W	1 W				2 W		3 W	4 W				
Make photographs								3 X	4 Z				
Utilize photography						2 W		3 X	4 X				
Utilize California State Arson Law						2 W		3 W	4 W				
Maintain clear and complete records						2 Y	3 Z	2 Y	3 Z				

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
<u>Meeting the Public</u>													
Identify the fireman's public obligations	1 W	2 W	3 W			4 W				2 W	3 W	1 W	
Identify the necessity for good public relations	1 W	2 W	3 W			4 W				2 W	3 W	1 W	
Participate in special details to assemblies		1 W	2 Y			3 Y		3 Y					
Prepare fire department displays		1 W	2 Y			3 Y		3 Y					
Prepare and give firemanship tests				1 W	2 W	2 Y	3 Z	2 Y	3 Z				
Address the public	2 W	2 W	3 Y			4 Y		4 Y					
Inform the public of types of service	1 W	2 W	3 W							2 W	3 W		
Adjust complaints						2 W	3 Z	3 Y	4 Z	1 W	3 Z		
Prepare newspaper and other publicity						1 W	3 Z	3 W	4 Z	1 W	2 Z		
<u>Fire Protection</u>													
Make surveys	1 W	1 W	2 Y			3 Y		3 Y	4 Z				
Conduct fire drills	1 W	1 W	2 Y			3 Y		3 Y	4 Z				
Demonstrate fire equipment	1 W	2 Y	3 Y			3 Z		3 Y	4 Z	1 W		1 W	
Organize and drill private fire brigades						3 W		3 Y	4 Z				
<u>Laws and Regulations</u>													
Utilize Federal laws	1 W	1 W	2 W			3 W		3 W		1 W	2 W		
Utilize State laws	1 W	1 W	2 W			3 W		3 W	4 Z	1 W	2 W	1 W	

	F/M			ENG		CAPT		INSP		A/O				MECH			
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST			PRE	POST		
Utilize county ordinances	1 W	1 W	2 W			3 W		3 W		1 W	2 W						
Interpret municipal government organization	1 W	1 W	2 W			3 W		3 W		1 W	2 W			1 W			
Interpret city charter	1 W	1 W	2 W			3 W		3 W		1 W	2 W			1 W			
Utilize city ordinances	1 W	1 W	2 W			3 W			4 Z	1 W				1 W			
Interpret and use civil service regulations	1 W	1 W	2 W			3 W				1 W				1 W			
Interpret retirement, pension, Workman's Compensation Act		2 W	3 W			4 W					3 W				3 W		
Utilize department rules and regulations											2 W				2 W		
Personnel and Functions																	
Identify fire department functions	1 W	2 W	3 W			4 W				2 W							
Identify and interpret duties of personnel	1 W	2 W	3 W			4 W				2 W				1 W	2 W		
Identify necessity for study and training	1 W	2 W	3 W			4 W				2 W	3 W			2 W	3 W		
Identify necessity for obligation to duty	1 W	2 W	3 W			4 W				2 W	3 W			2 W	3 W		
Identify necessity for obedience	1 W	2 W	3 W			4 W				2 W	3 W			2 W	3 W		
Develop proper esprit de corps	1 W	2 W	3 W			4 W				2 W	3 W			2 W	3 W		

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Professional Organizations													
Participate in National Fire Service organizations	1 W	1 W				2 W		2 W		1 W		1 W	
Participate in State Fire Service organizations	1 W	1 W				2 W		2 W		1 W		1 W	
Participate in local Fire Service organizations	1 W	1 W				2 W		2 W		1 W		1 W	
Participate in community organizations	1 W	1 W				3 W		3 W		1 W		1 W	
Mathematics													
Perform addition, subtraction, multiplication, and division	2 W	2 W	3 W	4 W						2 W	3 W	2 W	
Obtain powers of numbers	2 W	2 W	3 W	4 W						2 W	3 W		
Extract square root	2 W	2 W	3 W	4 W						2 W	3 W		
Use simple proportion	2 W	2 W	3 W	4 W						2 W	3 W		
Use simple algebraic equations	2 W	2 W	3 W	4 W						2 W	3 W	2 W	
Elementary Hydraulics													
Identify and define symbols and signs	2 W	2 W	3 W	4 W								1 W	2 W
Interpret formulas	2 W	2 W	3 W	4 W								1 W	2 W
Determine area, volume, and capacity	2 W	2 W	3 W	4 W								1 W	2 W
Determine pressure when head is known	2 W	2 W	3 W	4 W								1 W	2 W

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Determine head when pressure is known	2 W	2 W	3 W	4 W								1 W	2 W
Determine weight of water and its effect on structure and contents	2 W	2 W	3 W	4 W									
Identify sprinkler systems, benefits, limitations	2 W	2 W	3 W			4 W		4 W					
Use National Fire Code	1 W	1 W	2 W			3 W		3 W				1 W	2 W
Utilize principles of hydraulics in testing pumps	1 W	1 W	2 Y	3 Y								2 Y	3 Y
Identify fundamentals of pressure, vacuum, flow, head, suction, displacement, friction loss, back pressure, hydrant pressure, engine pressure, nozzle pressure, and capacity	1 W	1 W	2 Y	3 Y	4 Y			3 Y				2 Y	3 Y
Interpret effect of adverse conditions on pumps such as dry operation, salt water, and water temperature	1 W	1 W	2 Y	3 Y	4 Y							2 Y	3 Y
Interpret proper selection of pumps relative to discharge	1 W	1 W	2 Y	3 Y	4 Y							2 W	3 W
Determine R.P.M. of motor and pump and their relation to discharge	1 W	1 W	2 Y	3 Y	4 Y							2 Y	3 Y
Identify the characteristics of piston type, centrifugal, and rotary gear pumps, and the proper application of each	1 X	1 X	2 Y	3 Y	4 Y							2 X	3 Y

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Identify single-stage or multi-stage series and parallel pumps. Recognize the restricted use of certain types of pumps	1 X	1 X	2 Y	3 Y	4 Y							2 X	3 Y
Recognize the particular care required of piston type pumps	1 X	1 X	2 Y	3 Y	4 Y							2 X	3 Y
Use of churn valves and relief valves	1 X	1 X	2 Y	3 Y	4 Y							2 X	3 Y
Use of priming devices for different pumps	1 X	1 X	2 Y	3 Y	4 Y							2 X	3 Y
Related Chemistry													
Identify theory and fundamentals of combustion	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Identify cause and effect of improper combustion	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Identify common volatile oils	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Identify common gases encountered at fires	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Identify exotic fuels	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Interpret action of different extinguishing agents on various types of fires	2 X	2 X	3 Y	3 Y	4 Y	3 Z		3 Z				2 X	3 Y
Interpret National Fire Codes, Vol. 1, 2, 3	1 W	1 W	2 W			3 W		3 W	4 Y				
Identify classes of fire as defined by the Fire Prevention Code	1 W	2 W	3 W			3 Z							

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Identify fire characteristics of chemicals, oil, and paints	2 X	2 X	3 Y			3 Z		3 Z					
Interpret spontaneous ignition	2 X	2 X	3 Y			3 Z		3 Z					
Identify hazards of dust explosion	2 X	2 X	3 Y			3 Z		3 Z					
Identify the effect of water on fires involving chemicals, steel, concrete, brick, heavy timber and copre structures, dust producing products, and volatile oils of various flash points	2 X	2 X	3 Y			3 Z		3 Z					
Identify the effect of fire on steel, concrete, brick, heavy timber, and frame construction	2 X	2 X	3 Y			3 Z		3 Z					
Identify the effect of fire on various commodities, such as baled cotton, jute, oil, (in drums), paints, lime, and exotic fuels	2 X	2 X	3 Y			3 Z		3 Z					
Identify dangerous refrigerants commonly used	2 X	2 X	3 Y			3 Z		3 Z					
Velocity of Flow													
Determine velocity when head, pressure or flow is known	1 W	1 W	2 W	4 Y	4 Z	3 Z		3 Z				1 W	2 W
Determine flow when velocity is known	1 W	1 W	1 W	4 Y	4 Z	3 Z		3 Z				1 W	2 W

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Determine velocity of flow in one carrier when the velocity of flow in another carrier is known	1 W	1 W	2 W	4 Y	4 Z	3 Z		3 Z				1 W	2 W
Determine water hammer cause and effect	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	2 W
Determine friction loss in hose	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine flow when friction loss is known	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine friction factors	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine friction loss in hydrants, pipe, and water main	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine friction loss in standpipes and sprinkler systems and other appliances	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Engine and Nozzle Pressure													
Determine engine or nozzle pressure	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine EP by mental calculation	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine diameter of nozzle equalent	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Determine K factors	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W	
Discharge													
Determine discharge when pressure is known	1 W	1 W	3 W	4 Y	4 Z	3Z		3 Z				1 W	

	F/M		ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE POST
Determine diameter of nozzle when discharge and pressure are known	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W
Determine discharge from sprinkler system	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W
Determine coefficient for discharge	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W
Determine pump discharge at various pressures	1 W	1 W	3 W	4 Y	4 Z	3 Z		3 Z				1 W
Stream Range												
Determine horizontal and vertical range	1 W	1 W	2 W	3 Y	4 Z							
Determine NP for horizontal and vertical range	1 W	1 W	2 W	3 Y	4 Z							
Determine safe working pressures as related to nozzle size	1 W	1 W	2 W	3 Y	4 Z							
Determine one side of right triangle	1 W	1 W	2 W	3 Y	4 Z							
Determine angle of penetration	1 W	1 W	2 W	3 Y	4 Z							
Determine width of bracing necessary for given nozzle reaction	1 W	1 W	2 W	3 Y	4 Z							
Determine maximum height nozzle can be set for safe operation	1 W	1 W	2 W	3 Y	4 Z							

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Pumping and Relaying													
Lift water with pump	1 W	1 W	2 W	3 Y	4 Z							2 W	3 Y
Determine pump limitations	1 W	1 W	2 W	3 Y	4 Z							2 W	3 Y
Determine position of engines in relay lines	1 W	1 W	2 W	3 Y	4 Z								
Water Supply													
Determine source and volume of regular supplies	1 W	1 W	2 W	3 Y	4 Z								
Determine source and volume of emergency supplies	1 W	1 W	2 W	3 Y	4 Z								
Determine locations and purpose of control valves	1 W	1 W	2 W	3 Y	4 Z								
Determine service boundaries	1 W	1 W	2 W	3 Y	4 Z								
Determine quantity of water flow through a water main based on diameter, distance, and roughness coefficient	1 W	1 W	2 W	3 Y	4 Z								
Transpose hydraulic gradient into friction loss	1 W	1 W	2 W	3 Y	4 Z								
Related Electricity													
Identify theory and fundamentals of A.C. and D.C. current; voltage, amperage, wattage, resistance, induction, static, electrolysis, batteries, rectifiers	2 X	2 X	3 Y							2 X	4 Y	2 X	3 Y

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Utilize fundamentals of open and closed circuit	2 X	2 X	3 Y							2 X	4 Y	2 X	3 Y
Utilize fundamentals of fuses, circuit breakers, lighting arresters, grounding devices	2 X	2 X	3 Y							2 X	4 Y	2 X	3 Y
Identify types of wire or cable, sizes, where used, and how determined	2 X	2 X	3 Y							2 X	4 Y	2 X	3 Y
Identify types of permanent mounted and portable meters	2 X	2 X	3 Y							2 X	4 Y	2 X	3 Y
Utilize knowledge of aerial and underground construction, both wire and cable	2 X	2 X	3 Y							2 X	4 Y		
Utilize knowledge of fire alarm station equipment, public and auxiliary	1 W	1 W	3 W			3 W		3 W		2 X	4 Y		
Utilize theory and fundamentals of telephone communication	1 W	1 W								2 X	4 Y		
Utilize theory and fundamentals of short wave radio; public address systems	1 W	1 W								2 X	4 Y		
Clerical Administration													
Operate typewriters	2 X	2 X								2 X			
Operate office equipment	1 W	1 W								1 W			
Prepare correspondence	2 W	2 W				3 W		3 W		2 W	3 Z		
Execute ordinary business papers, requisitions, purchase orders, and receiving tickets	1 W	1 W				3 W		3 W		2 W	3 Z	2 W	

	F/M			ENG		CAPT		INSP		A/C		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Prepare manuscripts, reports, specifications, requisitions, and budgets from pre-determined data	1 W	1 W				3 W		3 W		1 W	2 Z	1 W	2 Z
Maintain filing systems	1 W	1 W				2 W		2 W	3 W	2 W	3 W	1 W	
Prepare payroll						2 W							
<u>Related Mechanics</u>													
Identify theory and fundamentals of motor driven apparatus	1 W	1 W				3 W						2 W	3 W
Interpret N.F.P.A. Handbook of Fire Protection (12th Edition) and technical pamphlets	1 W	1 W				2 W	3 W	3 W	4 W			1 W	3 W
Utilize fundamentals of lathe work												2 X	3 Z
Utilize fundamentals of welding, gas and electric												2 X	3 Z
Utilize fundamentals of blacksmithing												2 X	3 Z
Utilize fundamentals of pipe fitting; water, gas, and steam												2 X	3 Z
Identify mechanical principles of gasoline and diesel motors	1 W	1 W	2 W	3 W								3 W	3 Z
Identify mechanical principles of ignition	1 W	1 W	2 W	3 W								3 W	3 Z
Utilize fundamentals of gauges and meters	1 X	1 X	2 Y	3 Y								3 X	3 Z

	F/M			ENG		CAPT		INSP		A/C		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Identify mechanical defects, loose parts, unusual noises, unusual tire wear, and effects of tire pressures	1 W	1 W	2 Y	3 Y								3 Y	3 Z
Identify proper position of switches, gauges, levers, etc. Understand the effects of abrasive material on equipment	1 X	1 X	2 Y	3 Y								3 X	3 Z
Interpret the course and steps taken by the fuel from the fuel tanks to the exhaust	1 W	1 W	2 Y	3 Y								3 W	3 Z
Identify causes of improper combustion	1 W	1 W	2 Y	3 Y								2 W	3 Z
Identify proper use of choke	1 W	1 W	3 Y									2 W	3 Z
Identify the purpose of ignition in internal combustion engines	2 W	2 W	3 Y									2 W	3 Z
Identify the purpose of the distributor	2 W	2 W	3 Y									2 W	3 Z
Identify the causes of faulty ignition	1 W	1 W	2 Y	3 Y								3 Y	3 Z
Identify the purpose of pistons, rings, valves, oil, cooling systems, both permanent and auxiliary	1 W	1 W	3 Y									3 W	3 Z
Interpret meaning of R.P.M., torque, horsepower, and the purpose of each	1 W	1 W	2 W	3 W								2 W	3 Z
Identify the purpose of a transmission	1 W	1 W	2 W	3 W								2 W	3 Z

	F/M			ENG		CAPT		INSP		A/O		MECH	
	PRE	RECRUIT	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Identify the mechanical principle of power from piston to rear wheels	1 W	1 W	2 W	3 W								2 W	3 Z
Identify the purpose of a clutch, its proper use, effect of "riding" a clutch and effect of improper application	1 W	1 W	2 Y	3 Y								3 Y	3 Z
Identify the purpose of a differential	1 W	1 W	3 W									2 W	3 Z
Identify transmission of power from foot pedal to the brake shoe or drum, on mechanical type, on booster actuated type, on full hydraulic type, and on full air type	1 W	1 W	3 W									3 W	3 Z
Identify proper use of hand brake	1 W	1 W	2 Y	3 Y								2 W	3 Z

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
Supervisorial, Administrative and Management Functions and Responsibilities	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Review modern methods of fire prevention and protection through the medium of magazines, books, news letters, records of fires and their causes		3 Z		3 Z		3 Z	2 W	3 Z
Rules and regulations, and orders		3 Z		3 Y		2 Y	1 W	1 Z
Efficient operations of personnel and equipment		3 Z		3 Y		2 Z	1 W	2 Y
Estimates of situations at fires and issuance of necessary orders		3 Z		3 Z		3 Z	2 W	3 Y

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Maintain discipline and respect of subordinates		3 Z		3 Z		3 Y	1 W	2 Y
Plan, initiate, and carry out long-range programs in fire department administration		3 Z		3 Z		3 Y	1 W	2 X
Plan, assign, and coordinate activities performed by a large group of employees in varied fire fighting work		3 Z		3 Y		2 Y		1 Y
Prepare budgets		3 Z		3 Y		2 Y		1 X
Legislation concerning the fire service		3 Y		1 Z		1 Z		1 W
Assign personnel		3 Z		3 Y		2 Y		1 W
General routine and maintenance work		3 Z		3 Z		3 Z	2 W	3 Y
Maintenance and replacement of buildings		3 Z		2 Z		2 Z	1 W	2 Y
Maintenance and replacement of equipment		3 Z		3 Z		2 Z	1 W	2 Y
Installations and construction		3 Z	1 X	2 Y				
Alarm and communications		3 Z		3 Z		3 Y	1 X	2 Y
Personnel training		3 Z		3 Z		3 Y	1 X	2 Y
Utility franchise grants		2 Z	1 W	2 Y				
Program for emergency duty, including mutual aid		3 Z		3 Y		2 Y		1 Y
Data for apparatus and equipment specifications		3 Z		3 Y		2 Z	1 X	2 Y
Record-keeping systems in Stations and Bureaus		3 Z		3 Y		2 Z	1 Y	2 Y
Budget control		3 Z		3 Y		2 Z	1 X	2 Y

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Act as representative of the Fire Department								
Maintenance, expansion, modernization of fire alarm systems		3 Z	1 X	3 Y				
Relations between Bureaus and Divisions		3 Z		3 Z		3 Y	1 W	2 Y
Relations between intradepartmental Bureaus and Divisions		3 Z		3 Z		3 Y	1 W	1 Y
Relations between interdepartmental Departments and jurisdictions		3 Z		3 Y		2 Y	1 W	1 Y
Personnel matters		3 Z		3 Z		3 Z	2 X	3 Y
Safety programs		3 Z		3 Z		3 Z	2 X	3 Y
AIA grading schedule		3 Z		3 Z		3 Y	2 W	2 Y
Research in Fire Science Technology		3 Z		3 Z		3 Y	2 X	2 Y
Time and motion utilization		3 Z		3 Z		3 Y	1 W	2 Y
Manpower utilization		3 Z		3 Z		3 Y	2 W	3 X
Selection of personnel		3 Z		3 Z	2 W	3 Y		
Evaluation of personnel		3 Z		3 Z		3 Y	1 W	3 X
Analysis of records and data		3 Z		3 Y		3 X	1 W	2 X
Prefire planning		3 Z		3 Z		3 Z	2 X	3 Y
Co-operation with other fire fighting agencies		3 Z		3 Z		2 Z	1 W	2 Y
Use of available resources at a fire		3 Z		3 Z		3 Z	2 X	3 Y
Coordination of special local ordinances in fire prevention program		3 Z		3 Z		3 W	1 W	2 Y
Rescue tactics to be used at a fire		3 Z		3 Z		3 Z	2 X	3 Y

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Casualty handling		3 Z		3 Z		3 Z	2 X	3 Y
Locating evidence of incendiarism		3 Z		3 Z		3 Z	2 X	3 Y
Locating and protecting evidence at a fire		3 Z		3 Z		3 Z	2 X	3 Y
Fire protection problems involving hazardous materials, i.e., metals, plastics, explosives		3 Z		3 Z		3 Z	2 X	3 Y
Determining type of extinguishing agent to be used		3 Z		3 Z		3 Z	2 X	3 Y
Required ventilation at a fire		3 Z		3 Z		3 Z	2 X	3 Y
Size up fire and determine plan of operation		3 Z		3 Z		3 Z	2 X	3 Y
Water for community fire protection		3 Z		3 Z		3 Y	1 W	2 X
Emergency rescue methods		3 Z		3 Z		3 Z	2 X	3 Y
Establish basic aims of training		3 Z		3 Z		3 Z	2 X	3 Y
Instill discipline through proper training		3 Z		3 Z		3 Z	2 X	3 Y
Devising of tests to determine a unit's proficiency or progress		3 Z		3 Z		3 Z	2 X	3 Y
Establishment of policies and criteria as a guide for subordinates		3 Z		3 Z		3 Y	1 W	2 X
Reviewing span of control--can supervisor effectively control considering time and space factors?		3 Z		3 Z	2 X	3 Y		
Minimizing administrative burdens at lower echelons		3 Z		3 Z	2 X	3 Y		

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Delegation of authority to subordinates commensurate with assigned responsibilities		3 Z		3 Z		3 Z	2 X	3 Y
Providing necessary means to subordinates to permit accomplishment of assigned mission		3 Z		3 Z		3 Z	2 X	3 Y
Establishment of respect and trust of subordinates		3 Z		3 Z		3 Z	2 X	3 Y
Analyzing administrative procedures to improve efficiency of operations		3 Z		3 Z		3 Y	1 W	2 Y
Periodic review of administrative procedures to determine if desired objectives are being achieved		3 Z		3 Z	2 X	3 Y		
Recruitment, interview, and assignment of personnel		3 Z		3 Y	1 W	2 X		
Appraisal of performance and potential of personnel with view of advancement to positions of greater responsibility		3 Z		3 Z		3 Z	2 X	3 Y
Provision for guidance and counseling of personnel to further their development		3 Z		3 Z		3 Z	2 X	3 Y
Periodic review of procedures and practices in effect in personnel development to determine if desired objectives are being achieved		3 Z		3 Z		3 Y	1 W	2 X
System of job rotation, as applicable in training of personnel to develop their potential for positions of greater responsibility		3 Z		3 Z		3 Y	1 W	2 Y

	CHIEF		ASST CHIEF		BATTN CHIEF		CAPTAIN	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Maintenance of executive inventory control to determine if qualified personnel are being trained to meet attritional losses in key positions		3 Z	2 X	3 Y				
Knowledge of individual characteristics of key personnel and what qualities will elicit their best efforts		3 Z		3 Z		3 Y	1 W	2 X
Establishment of rating system for evaluation of personnel in duty performance		3 Z		3 Z		3 Y	1 W	2 X
Planned program of promotion		3 Z	1 X	3 Y				
Recognition of outstanding work		3 Z		3 Z		3 Z	2 X	3 Y
System of incentives and awards		3 Z		3 Z		3 Y	1 W	2 X

APPENDICES

Appendix A

Participating Fire Departments

Alhambra Fire Department
Roy R. Ludt, Chief

Anaheim Fire Department
Ed. J. Stringer, Sr., Chief

Arcade Fire Department (Sacramento)
George W. Requa, Chief

Bakersfield Fire Department
Charles P. Linnell, Chief

Big Bear City Fire Department
F. D. Rush, Chief

Buena Park Fire Department
J. William Verbeck, Chief

Burbank Fire Department
W. J. Taylor, Chief

Campbell Fire Department
George R. Maxwell, Chief

Carpinteria-Summerland Fire Department
Frank Floyd, Chief

Central Fire Protection District (San Jose)
Fred M. Luhring, Chief

Chino Fire Department
Lester C. Hemstreet, Chief

Chula Vista Fire Department
George S. Lee, Chief

Claremont Fire Department
William G. Schrink, Chief

Colton Fire Department
Leonard E. Temby, Chief

Compton Fire Department
Lewis W. Parsons, Chief

Contra Costa County Consolidated
Fire District (Pleasant Hill)
Albert V. Streuli, Chief

Corona Fire Department
Jim L. Johnson, Chief

Costa Mesa Fire Department
John A. Marshall, Chief

Covina Fire Department
Richard A. Miller, Chief

Davis Fire Department
Louie J. Lema, Chief

Downey Fire Department
Robert W. Gain, Chief

Emeryville Fire Department
Peter Vittori, Chief

Empire Fire Protection District
Lester O. Bowman, Chief

Escondido Fire Department
Louis Whyte, Chief

Fallbrook Fire Protection District
William G. Thurber, Jr.

Fontana Fire Protection District
William J. Janka, Chief

Fremont Fire Department
Thomas L. Estudillo, Chief

Fresno Fire Department
Edwin F. Wrought, Chief

Fullerton Fire Department
Lloyd W. Eckels, Chief

Gardena Fire Department
Carl L. Carlson, Chief

Hayward Fire Department
Matthew Jimenez, Chief

Huntington Beach Fire Department
Delbert G. Higgins, Chief

Indio Fire Department
Robert F. Fink, Chief

Inglewood Fire Department
Joe G. Smith, Chief

Kern County Fire Department (Bakersfield)
John N. Woollomes, Chief

Lake Arrowhead Fire Protection District
Raymond A. Ceniceros, Chief

La Mesa Fire Department
Robert O. Sever, Chief

Lodi Fire Department
Forrest Eprosen, Chief

Long Beach Fire Department
Leonard Foster, Chief

Los Angeles County Fire Department
Keith Klinger, Chief Engineer

Manteca Fire Department
James M. Gould, Chief

Marin County Fire Department (Woodacre)
Louis Bloom, Chief

Marysville Fire Department
Robert L. Miller, Chief

Menlo Park Fire Protection District
George B. Carter, Chief

Merced City Fire Department
George Coolures, Chief

Modesto Fire Department
C. Wayne Everett, Chief

Monrovia Fire Department
Fritjof T. Becker, Chief

Montecito Fire District
George H. Ensign, Chief

Napa Fire Department
John E. Stone, Chief

National City Fire Department
J. C. Bailey, Chief

Newport Beach Fire Department
R. J. Brisco, Chief

North Central Fire Protection
District (Fresno)
Henry Tanaka, Chief

Oakland Fire Department
James J. Sweeney, Jr., Chief

Oceanside Fire Department
Richard W. Trotter, Chief

Orange Fire Department
Floyd D. Higgins, Chief

Ontario Fire Department
Richard L. Custer, Chief

Oxnard Fire Department
Forrest O. Witt, Chief

Palm Springs Fire Department
Warren D. Empey, Chief

Palo Alto Fire Department
Wilson M. Merriam, Chief

Pasadena Fire Department
T. William Heidner, Chief

Rancho Cordova Fire Department
Elmer R. McBeath, Jr., Chief

Redlands Fire Department
Joseph W. Budd, Chief

Redondo Beach Fire Department
Harold V. Harrison, Chief

Redwood City Fire Department
Joseph L. Lodi, Chief

Richmond Fire Department
Ray P. Martin, Chief

Riverside Fire Department
B. L. Montgomery, Chief

Sacramento Fire Department
Thomas A. Deise, Chief

San Bernardino Fire Department
Dwight Littleton, Chief Engr.

San Bruno Fire Department
Herbert F. Freitas, Chief

San Francisco Fire Department
William F. Murray, Chief

San Diego Fire Department
Ray Shukraft, Chief

San Jose Fire Department
R. LeBeau, Chief

San Leandro Fire Department
Manuel Rodriguez, Chief

San Mateo Fire Department
Noe J. Chanteloup, Chief

San Pablo Fire Department
Manual Teixeira, Chief

Sanger Fire Department
Retson E. Jemison, Chief

Santa Ana Fire Department
John Garthe, Chief

Santa Barbara City Fire Department
Delmer William May, Chief

Santa Barbara County Fire Department
Victor L. Mohr, Chief

Santa Maria Fire Department
Harry H. Bell, Chief

Santa Monica Fire Department
John F. Sturges, Chief

Santa Rosa Fire Department
Eugene J. Duignan, Chief

South Gate Fire Department
Hugh Powell, Chief

Stockton Fire Department
Mitchell Coolures, Chief

Turlock Rural Fire Protection
District
Robert E. Schmidt, Chief

Upland Fire Department
Leon G. Lamphear, Chief

Ventura City Fire Department
A. J. Comstock, Chief

Ventura County Fire Department
B. B. Haggard, Chief

West Sacramento Fire Department
Lawrence Valine, Chief

Yuba City Fire Department
William E. Burke, Chief

Appendix B

Statewide Advisory Committee

Dr. C. Thomas Dean
Dean of Applied Arts and Sciences
California State College at Long Beach

Charles Patrick, President
San Diego City College
(Represented by Kenneth Fawcett)

Thomas G. Dunne, City Manager
City of Salinas

Andrew Clark, Executive Secretary
County of Colusa

Harry Bigglestone, Chief Engineer
Pacific Fire Rating Bureau
San Francisco

Carl Weers, Assistant Chief Engineer
American Insurance Association
San Francisco

G. Rodney Porter, Fire Chief
Berkeley Fire Department

Leonard E. Temby, Fire Chief
Colton Fire Department

Byron R. Chaney, Fire Chief
Mountain View Fire Department

Robert L. Miller, Fire Chief
Marysville Fire Department

James M. Gould, Fire Chief
Manteca Fire Department

John F. Sturges, Fire Chief
Santa Monica Fire Department

Robert O. Severs, Fire Chief
La Mesa Fire Department

Leonard Foster, Fire Chief
Long Beach Fire Department

C. Wayne Everett, Fire Chief
Modesto Fire Department

Appendix C

Regional Advisory Committees

BAY AREA REGIONAL COMMITTEE

G. Rodney Porter, Fire Chief
Berkeley Fire Department

Byron R. Chaney, Fire Chief
Mountain View Fire Department

Dean P. Holzgrafe, Fire Chief
Newark Fire Department

Charles V. Gebhardt, Deputy Chief
San Leandro Fire Department

Richard D. Starr, Assistant Chief
Contra Costa County Fire Protection District (Pleasant Hills)

Archie Bernardi, Assistant Chief
Arcata Fire Department

Bruce L. Wiggins, Fire Marshal
Santa Clara County Fire Marshal's Office (San Jose)

Charles D. Brammel, Captain
Oakland Fire Department

John W. Speed, Captain
Vallejo Fire Department

Charles M. Harper, Engineer
Fairfield Fire Department

Larry Herrera, Electrician
Department of Public Works
City of San Jose

Steve Olson, Mechanic
Berkeley Fire Department

FRESNO REGIONAL COMMITTEE

C. Wayne Everett, Fire Chief
Modesto Fire Department

R. E. Jemison, Fire Chief
Sanger Fire Department

Robert E. Schmidt, Fire Chief
Turlock Rural Fire Protection District

Robert B. Williams, Deputy Chief
Kern County Fire Department (Bakersfield)

Jack N. Wainscott, Battalion Chief
San Luis Obispo Fire Department

George B. Thrasher, Fire Marshal
Tulare Fire Department

George E. Watson, Captain
Hanford Fire Department

Donald E. Woodruff, Captain
Fresno Fire Department

Joseph G. Fuentes, Captain
Madera Fire Department

Don D. Livesay, Captain
Merced Fire Department

Tommy E. Anderson, Engineer-Fire Alarm
Delano Fire Department

Norman O. Jefford, Assistant Director of Public Works
City of Fresno

LOS ANGELES REGIONAL COMMITTEE

Leonard Foster, Fire Chief
Long Beach Fire Department

John F. Sturges, Fire Chief
Santa Monica Fire Department

Robert W. Gain, Fire Chief
Downey Fire Department

Howard S. Tucker, Deputy Chief
Glendale Fire Department

Victor E. Stephens, Battalion Chief
Pasadena Fire Department

Bernard F. Gallagher, Battalion Chief
Santa Barbara Fire Department

William E. Fox, Battalion Chief, Fire Marshal
Inglewood Fire Department

Eugene M. Schmitz, Captain
Los Angeles Fire Department

Ralph Robins, Captain
Compton Fire Department

Howard Wells, Engineer
Covina Fire Department

Earl J. Smith, Senior Alarm Technician
Santa Monica Fire Department

Russell V. Gallentine, Master Mechanic
Alhambra Fire Department

SACRAMENTO REGIONAL COMMITTEE

Robert L. Miller, Fire Chief
Marysville Fire Department

Charles W. Prather, Fire Chief
University of California (Davis) Fire Department

James M. Gould, Fire Chief
Manteca Fire Department

Robert L. Lerch, Assistant Chief
Rancho Cordova Fire Protection District

Fred L. Preeo, Assistant Chief
Tuxedo-Country Club Rural Fire District (Stockton)

Harold H. Redgate, Battalion Chief
Sacramento Fire Department

Donald L. Ryan, Battalion Chief
Citrus Heights Fire Department

Matthew De Pauli, Battalion Chief
Arcade Fire Department (Sacramento)

Jack L. Hurd, Captain, Fire Alarm
Arcade Fire Department (Sacramento)

Arthur V. Whitney, Captain
Fair Oaks Fire Department

Robert I. Schultz, Captain
Sacramento Fire Department

Darrell D. Day, Engineer
Yuba City Fire Department

Kenneth Blawat, Engineer-Mechanic
Rancho Cordova Fire Protection District

SAN BERNARDINO-RIVERSIDE REGIONAL COMMITTEE

Leonard E. Temby, Fire Chief
Colton Fire Department

Leon G. Lamphear, Chief
Upland Fire Department

Jim L. Johnson, Chief
Corona Fire Department

Walter K. Gard, Assistant Chief
Ontario Fire Department

R. J. Keen, Battalion Chief
Fontana Fire Protection District

Ward B. Ensley, Battalion Chief
Riverside Fire Department

Gaford G. Medley, Battalion Chief, Fire Marshal
Ontario Fire Department

Jerry D. Jones, Captain
Rialto Fire Department

Jerry L. Stickles, Captain
Palm Springs Fire Department

Joseph P. Martin, Engineer
Montclair Fire Department

Ivan Richardson, Master Mechanic
San Bernardino Fire Department

Lawrence S. Dangelo, Alarm Technician
Riverside Fire Department

SAN DIEGO REGIONAL COMMITTEE

Robert O. Severs, Fire Chief
La Mesa Fire Department

James A. Fox, Fire Chief
Rancho Santa Fe Fire Department

Raymond C. Picard, Fire Chief
Huntington Beach Fire Department

R. M. Halgren, Fire Chief
El Cajon Fire Department

Leonard T. Bell, Deputy Chief
San Diego Fire Department

James K. Thompson, Assistant Chief
Escondido Fire Department

Ray H. Bachtelle, Battalion Chief
Santa Ana Fire Department

Ronald J. Coleman, Captain
Costa Mesa Fire Department

Rudy A. Schmoke, Jr., Captain
Chula Vista Fire Department

Earl R. Carson, Captain
Oceanside Fire Department

Daniel J. Schultz, Engineer
Spring Valley Fire Protection District

Lawrence Dresser, Communications Officer
Santa Ana Fire Department

Calvin Medinger, Superintendent of Maintenance
City of El Cajon